SURGICAL HEALING, POWER AND SOCIAL STRUCTURE

An Ethnographic and Historical Study

NICHOLAS J FOX

Thesis submitted for the degree of PhD

University of Warwick

School of Sociology

APRIL 1989

SUMMARY

How the everyday activities of surgery mediate and reproduce surgical authority and privilege is studied by ethnographic study and interview material in and around the operating theatres of a large district general hospital, on surgical wards, and in a day surgery unit, using a case study approach.

Routinised movements of staff, patients and instruments within the operating theatre suite (OT) order the activities by which patients pass through surgery. These movements are structured, and culturally designated, to ensure the safety of the patient during the dangerous transgression of boundaries in surgery.

The history of surgical sterility indicates the symbolic significance of sterile garb, to mask the polluting bodies of the surgical staff and designate them purifiers of corrupting nature. Sterile techniques signify the superiority of cultural definitions over those based in 'nature'.

While the surgeon is concerned with a patient's Illness, the anaesthetist is concerned with her/his Fitness. This interaction enables all operations other than those where both Fitness is reduced and Illness is not reduced, to be proclaimed 'successful'. Consequently, patients may be allocated a socially defined status of 'healed', despite no improvement in physiological status.

Cross-cultural comparison suggests that surgical healing involves a social status passage from a negative status of victim to a positive one of survivor. Healing is socially reintegrative: it re-creates apparent congruence between the life-scales of the sick person and social structure, which is destroyed by illness.

Case studies refine the hypothesis that this social recategorisation legitimates surgical authority and privilege. Both the operation's 'success' and patient discharge are found to be necessary for a full claim to have healed.

The potential to generalise the model to all medical intervention, and the implications for surgery and the sociology of health and healing are discussed.

TABLE OF CONTENTS

FIGURES IN TEXT

AUTHOR'S DECLARATION

No part of the contents of this thesis, or of the study upon which it reports, has previously been submitted for any degree or qualification. The material in Chapter 4 has appeared as a publication by the author in the journal History of Science, under the title: Scientific Theory Choice and social structure: the case of Joseph Lister's antisepsis, humoral theory, and asepsis. (History of Science **26** [1988] 367-397). The study reported upon in this thesis has been originated solely by the author, and no part is the result of collaboration.

KEY TO ABBREVIATIONS

AI	Analytic Induction
A and E	Accident and Emergency
DCS	Day Case Surgery
IT(U)	Intensive Therapy (Unit)
OT	Operating Theatre Suite
NHS	National Health Service
PAC	Paradox of autonomy and constraint
SC	Sterile Corridor

CHAPTER 1: INTRODUCTION

This study considers, by means of ethnography, interviews, cross-cultural and historical material, the processes by which the everyday practices of the medical specialty of surgery mediate and reproduce the status of surgery as highly prestigious, and its reputation in Western culture as an authoritative technique of healing. The study examines the techniques associated with surgery in their socio-cultural context, and seeks an understanding of how, at the social as opposed to physiological level, surgery achieves an alteration in the status of its patient. By such an exercise, the daily routines of surgical culture are linked to the structural components which in Western society organise human bodies in terms of health, sickness and biography. Rather than concentrate upon a 'macro' analysis of surgical authority and prestige in terms of class or closure, links are sought by which everyday techniques in the surgical space mediate and reproduce that authority. Hypotheses and a plan of the structure of the thesis are set out at the end of this chapter.

Surgery: an unexamined topic for sociology

In the short history of the sociology of health and illness, British sociology's most populated sub-discipline (Claus, 1982), the topic of surgery has remained virtually unexamined. The handful of sociological studies of this prominent medical specialty forms an early section of this chapter.

The reasons for this apparent hiatus are unclear. Medical sociologists have been enthusiastic in what has been called by one sociologist, the 'academic encirclement' of medicine

(Strong, 1979). From early studies of 'doctor-patient interaction' in general practice (Stoeckle et al, 1963; Zola, 1966; Forsyth, 1966; Cartwright, 1967; Tudor Hart, 1971;Robinson, 1973; Byrne and Long, 1976) and a range of studies which may be designated 'social factors/life events' (for example Dohrenwend and Dohrenwend, 1969, 1973; Murray Parkes et al, 1969; Brown and Harris, 1978; Schmale and Iker, 1971; Mechanic, 1978; Leff, 1982) many medical specialties from paediatrics (Armstrong, 1979) to community medicine (Gill, 1976) have been subjected to sociological analysis.

Of those studies in the sociology of (as opposed to 'in') medicine, which have focused on specific medical specialties, many adopted interactionist and ethnomethodological perspectives on their subject matter (for example Becker, 1961; Glaser and Strauss, 1970; Stimson and Webb, 1975; Bloor, 1976; Dingwall, 1976; Stimson, 1976; Wadsworth and Robinson, 1976; West, 1976; Davis and Horobin, 1977; Jeffery, 1979; Atkinson, 1981; Atkinson and Heath, 1981) and it is possible that this type of study, in which the subject matter is really no more than a vehicle for generalisation about the rules women and men use during interactions - any setting will do - has resulted in a sense that everything there is to discover about medical interaction has been discovered and study of further settings, for instance those associated with surgery, will not elicit further insights.[1]

A move to policy-oriented research, and the availability of funding for social research in medicine (for example, witness the recent explosion in research into 'health behaviour' based on the demand for social research into AIDS-related topics) may also have targeted chronic disease as attractive, as opposed to the acute specialties within health care (for example Gallagher, 1977; Bury, 1982; Higgins, 1980; Evers, 1981; Walker, 1981) and, associated with this direction, contributions have been made in the areas of education and preventative

health care (Knowles, 1977; Graham, 1979; McKeown, 1979; Popay, 1980; Popham, 1981; Rose, 1981; Eyer, 1984; Malin, 1987).

The feminist critique of medicine has also been a rich strand for sociological research within the sub-discipline, often overlapping with the previous categories, and identifying areas such as childbirth which have been medicalised (Macintyre, 1978; Oakley, 1980; Arney and Neill, 1982) or the particular consequences of medical authority for women (Emerson, 1970; Nathanson, 1975; Elston, 1977; Roberts, 1981; Young, 1981; Graham, 1984). The other macro-factor of stratification, ethnicity, has also supplied the sub-discipline with a range of studies (for a review see Hillier and Scrivens, 1986).[2]

This brief, and far from exhaustive, tour of those studies within the sociology of health and illness which have focused on specific specialties may supply a clue to the absence of a substantive study of surgery, in that its historical concerns have been with topics within medicine with an 'obvious' social component - patient compliance, life events, gender and ethnicity, chronic and stigmatising illness - and a range of studies which subjected practices in medicine to non-positivistic analysis. Surgery, with its apparent emphasis on anatomy, acute disease, and clear prognosis may by and large have appeared an un-attractive area for sociological study. Foucault's observations upon the social determinants of Enlightenment medicine's decision to 'open up a few corpses' (Foucault, 1976) have as yet to stimulate sociological study of anatomy and its practical cousin, surgery.

That having been said, it would be surprising if such an important clinical specialty as surgery had not stimulated social research. This however has by and large occurred within the disciplines of economics and social psychology. It is to the latter that this review will turn first, before addressing

those few sociological studies which have (mostly tangentially) investigated the specialty.

Surgeons, patients and power, the red herring of 'compliance'

The stereotypical autocratic surgeon is well documented in popular literature, from Richard Gordon's Sir Lancelot Spratt, to Colin Douglas's surgeon Ravelston Orr. This individualistic analysis of surgical authority has been reflected in psychological studies of the surgical personality. Eisenberg et al (1983) assessed the attitudes of US surgical and medical residents, finding that by the third year of the programme, the surgical residents had become more authoritarian than their medical colleagues. They suggested this was a consequence of the task-oriented, hierarchical nature of the training programme. Coser (1958) also related the authoritarianism of surgical residents to the kinds of activity required of surgeons: an emphasis on speed, action and punctuality. On the other hand, a British study of doctors found that 48 per cent of surgeons considered themselves 'right-wing' as opposed to ten per cent of psychiatrists (Wakeford and Allery, 1986), while the same researchers found that these variations in political views were held by prospective members of the different specialties while still medical students, seventy per cent of those planning a career in surgery describing themselves as 'right-wing' as opposed to 16 per cent of prospective psychiatrists (Wakeford et al, 1986).

These studies corroborate the popular image of surgery as a medical specialty populated by authoritarian personalities. Both Eisenberg et al and Coser relate this attitudinal trait to the material circumstances and activity-orientated requirements of the surgical enterprise. Such an analysis, by focusing on surgical authority (at the expense of the other interesting aspect of surgical power, its highly prestigious profile in the role call of professions, and within medicine itself),

articulates with a considerable social-psychological literature on surgical patients and their compliance with surgical healing. Trostle (1988) recorded that 3200 articles on 'compliance' appeared in Index Medicus between 1979 and 1985.

That surgery is authoritarian in its dealings with patients is evident from a study of this (sociologically naive) literature on patient 'compliance' and recovery from surgery. The sociological critique of the notion of compliance is that it takes a medico-centric, and thus ideological (ibid:1299), perspective upon the enhancement of the doctor-patient relationship: compliance is perceived as a positive trait, representing the degree to which patients fall in with the wishes of their doctors (Zola, 1981:243. For a review of the literature on compliance see Trostle (1988:1300-1306). Frankenberg (1974) identified such a medico-centric version of compliance in Parsons' functionalist analysis of doctor and patient roles; a perspective which Gerhardt (1979) attributes to Parsons' intellectual debt to psychoanalytic theory. The Parsonian project and its critics are reviewed at length below with regard to the topic of clinical power.

In much of the empirical literature on surgical compliance, this positive evaluation of 'compliance' therefore remains unexamined, and the attainment of increased compliance is perceived as being achieved by what amount to ploys by which patients are persuaded to see their forthcoming, clinically defined, treatment as desirable. A corpus of studies identify pre-surgical anxiety as undesirable in patients: it leads to post-operative anxiety (Johnston, 1980), adjustment to post-operative pain (Reynolds, 1978), consumption of analgesics (Ridgeway and Matthews, 1982; Weis, 1983), physiological ' measures of recovery (Andrew, 1970), and length of hospital stay (Matthews and Ridgeway, 1981). The range of techniques recommended as a consequence of these studies reflect either a physiological (stress) or a cognitive psychological approach.

The former studies usually involve presentation of some material germane to the patient's forthcoming experience in the form of written or audio-visual material (for example Egbert et al, 1964; Johnson et al, 1971; Johnson and Leventhal 1974; Ryan, 1975; Auerbach et al, 1976; Sime, 1976; Reynolds, 1978; Reading, 1979; Ray and Fitzgibbon, 1981.) The latter cognitive studies take into account the possibilities of variation in patient perception of surgery and advocate a more patient-centred counselling approach. Andrew (1970) identified three coping styles in patients and consequently three alternative methods of anxiety reduction. Hartsfield and Clopton (1985) categorised patients according to their internal or external 'locus of control'. Kendall et al (1979) argued that cognitive intervention should identify the patient's own coping style and reinforce that, rather than impose one method of coping. Ridgeway and Matthews (1982) found this most effective in reducing demand for post-operative analgesics. (See Rundall, 1978 for a study which found no evidence for either model.)

The policy implications of these studies were identified by McNeil et al., who:

> interviewed patients with 'operable' lung cancer and found that they were quite adverse to taking risks involving the possibility of immediate death. These results emphasise the importance of choosing therapies not only on the basis of survival rates but also on .... patient attitudes (1978:1397).

These studies suggest a less medico-centric analysis, and pose problems for clinicians in their consequences. For example, discussing the problematic issue of informed consent and its potential effect of increasing anxiety prior to surgery, Wallace (1986) notes that 63 per cent of a sample of surgical patients were fearful on admission; 35 per cent wanted no or only sketchy information, and 30 per cent welcomed frightening

information but would not advise giving such information to a friend in the same position. Those given a booklet providing simple reassurances about a forthcoming laparoscopy were more anxious than those receiving either no information or very detailed information (full informed consent).

However Wallace's conclusion returns to her perception of a more important factor: the physiological benefits of anxiety reduction, having also found that detailed information (full informed consent) led to swifter recovery from this minor procedure (ibid:32), thus once again reinforcing a medico-centric perspective on compliance, albeit with a suggestion of 'shifts towards greater patient involvement in care' (ibid:33). Such a liberal version of 'compliance' is echoed by Woolley et al:

> .... the degree to which the patient believes that the doctor cares about him may be the most important element in determining compliance and satisfaction. The effectiveness of communication may be far less important than the fact that the effort has been made (1978:127);

while Zola has argued for a 'therapeutic alliance' based on the transfer of some clinician power to the patient, and more open communication, as the resolution of non-compliance (1981:250).

This review of the studies of 'compliance' in relation to surgical patients began with the suggestion that by taking the individual patient as the focus of surgical authority precluded any analysis of the other (and it is suggested, interdependent) interesting aspect of surgery, its profile as a privileged (high status) medical specialty and form of healing. In proposing to demonstrate this interdependence, this question might be posed: what is to explain the continuing public enthusiasm for the particular brand of healing proffered by Western surgeons, despite the growing antipathy to

authoritarian medical care, as marked by the 'problem of non-compliance?'

This wording identifies both authority and privilege as interesting aspects of surgical power. Just as, it has been argued, the compliance studies ignore surgical privilege, another tradition, that of Weberian analysis of closure in relation to professional groupings, brackets the 'everyday' issue of patient compliance, focusing instead on traits which identify 'professionalism'.

Moore (1970), for example, suggested six traits: full time occupation, normative expectations about that occupation, formal organisation, specialized education, service orientation and a notion of responsibility. The absurdity of this methodology may be seen in Wilensky's (1964) concentration upon one trait, in this case the service ideal, which led him to meditate upon 'the professionalisation of everyone?'

Parry and Parry prefer the notion of aspiration to a 'gentleman ideal'. Doctors professionalised as an occupational strategy in response to fluctuations in capitalist production, excluding outsiders from specific economic opportunities they wished to keep for themselves (Parry and Parry, 1976:84-6). Upward social mobility demanded that doctors be both experts and gentlemen, they are petty bourgeoisie seeking inclusion in the upper class (ibid:88).

These accounts remain essentially descriptive. Closure may explain the process by which certain groups enhance their status, but it cannot situate the achievement of closure historically without recourse to teleological ascriptions to the 'needs of society'. It fails as analysis because it perceives the structures and processes of society as not only external to, but somehow independent of the actors, rather than as real, but mediated and reproduced through their actions.

If that is the case, then the phenomenon of closure may be seen not only in historical studies of professional groupings, not only in 'macro' studies of professions (for example Gill (1976) on community physicians; Johnson (1977) on accountants; McGlew and Robertson (1981) on preventive medicine; Elston (1977) on a comparison of medical specialties), but in the 'everyday' activities of 'professionals'.

It has been suggested that the analysis of the relationship between power and knowledge in Foucault's genealogies of the disciplines of medicine, law, learning and the workplace offer an alternative to a Weberian analysis of the professions (Goldstein, 1984). Foucault did not concentrate on occupational groupings, but upon the recipients of 'professional' knowledge - the masses (ibid:175), depicting disciplines as meticulous methods by which docile bodies are manipulated and controlled; the manipulators being none other than the 'professionals' of the Anglo-American tradition (ibid:176).

Foucault's method is to excavate that which, at particular moments in history, constitutes 'knowledge'; thereby discovering how power is generated in the daily interaction between those in authority (sanctioned in using 'knowledge') and those submitting to it. Researchers in the sociology of health and illness influenced by this method, notably Armstrong and Prior in the United Kingdom, have sought to apply the analysis to the development of a number of medical specialties including paediatrics and general practice (Armstrong, 1979, 1982), pathology (Prior, 1987) and childbirth (Arney and Neill, 1982). Surgery has yet to be exposed to this methodology.

The present study is not however amenable to Foucaultian analysis, being effectively a synchronic rather than diachronic study, although in Chapter 4 an historical investigation of the development of surgical sterility is pursued. However, following Silverman (1985), a perspective which seeks to

address the 'macro' issues of surgical authority and privilege through the 'micro' methods of ethnography: structuralism, - a method considered the forerunner of Foucault's post-structuralism - has been adopted. The argument in favour of such a methodology is considered in the next chapter. First it is appropriate to review the small number of sociological studies which have identified aspects of surgical power through examining the activities conducted in the surgical milieu.

Surgical power: the sociological literature

The poverty of patient input to surgical decision-making is the basis of a range of studies. Travis's assessment of the relative risks associated with hysterectomy (Travis, 1985) concludes that the potential costs are high in relation to benefits of the procedure, and that decisions over whether the procedure is invoked in a case will depend upon the surgeon's assessments of cancer risk at the expense of patient preference.

Silverman's (1981) study of paediatric cardiac surgery identified a corollary to this theme. Comparing consultations involving 12 Down's syndrome children with 22 non-Down's he found that while parents had little input in deciding for or against surgery in non-Down's children, parents of Down's children were offered a degree of choice unusual within the British NHS. Consultants allowed the issue of perceived patient 'happiness' to be a determining factor in the latter group of children whose potential was perceived as limited by their genetic condition.

The triad of parent-patient-doctor was also of interest to Strong (1978) in his study of a paediatric clinic. Parents were usually treated according to a 'bureaucratic' model which permitted their possessing a moral right to decision-making involving their child, while in practice limiting opportunity

to make decisions. In some instances this moral right was withdrawn, the relationship adopting a 'charity' model. This study is only of tangential relevance, the majority of children attending for non-surgical consultation.

Assessment of children for adeno-tonsillectomy also featured this triad in Bloor's (1976) study. Parents could influence this assessment by the history of their children's illness career they provide, but clinicians would curtail these opportunities by using a search technique to display 'relevant' information, and doubting parental evaluations beyond these 'facts'. Parents might also be offered opportunities to 'set the agenda' of the consultation, yet the specialist could nullify the potential influence thereby created by hijacking the parental agenda, inhibiting discussion of disposal or invoking professional expertise. All these techniques enhanced functional autonomy for the specialist during everyday clinic encounters, but were used differentially by the eleven ENT specialists observed.

Turning from studies of doctor-patient (or doctor-parent) interaction in the surgical milieu, a small number of studies have focused on interactions between surgeons and others in the operating theatre and its environs. Atkinson (1981) refers en passant to interaction within the operating theatre, principally in relation to the problems of participant observation.

In his study of role distance, Goffman (1961) provided a short ethnography of the interactions between junior and senior surgeons and other staff within the operating room of a large American hospital. Seniority was not, he found, asserted in a unidimensional manner. Junior surgeons would often be restive in their low status position, particularly as this would be played upon by nursing staff; they would distance themselves from their menial tasks, indulge in horseplay or play the jester. The senior surgeon would similarly distance himself

(sic) from his role, making small jokes to reduce his apparent superiority, or responding to mistakes with mock courtesy. He (sic) may seek tension reduction by joking or chatting. Goffman regarded these examples of role distancing as oiling the wheels of a stressful situation in which all are required to play a part despite manifest inequalities in status, by permitting a degree of standing 'out of role' (Goffman 1961:116-132).

Another study which bears on this negotiation of rank within the specialty was conducted by Bosk (1979). Focusing on those incidents in which errors have been made in the conduct of surgery resulting in actual or potential iatrogenic morbidity or mortality, Bosk describes the internal control procedures which detect, categorize and punish error. These take the form of routine collegial surveillance and the ceremonial occasions such as 'grand rounds' and morbidity/mortality conferences at which errors may be openly discussed. Errors are categorised according to a moral order. The 'un-forgivable error' is one which offends the normative obligations of the professional.

Bosk's conclusions as to the bases of these normative judgements articulate closely with certain Parsonian pattern-variables ascribed to the doctor role: affective neutrality, collectivity orientation, and functional specificity (Parsons, 1951: 434-4). This may be a consequence of an approach which by concentrating upon the deviant rather than the routine, emphasises professional closure and the management of consensus. The attractions and disadvantages of adopting a functionalist perspective upon the relationship between clinical interaction and social structure will be reviewed at length below, when consideration will turn to the model of the sick role as outlined by Parsons and criticised subsequently by a number of sociologists of health and illness.

A more cynical analysis of surgical error is offered in Millman (1977) in terms of the consequences for patients. The analysis here is principally prescriptive, aimed at a popular market, and advocating an increase in patient power. The study reflects the US experience of private medicine, the excesses of which have been documented by a range of authors (for example Navarro, 1976, 1982; Newman, 1979; Inglehart, 1982).

Flood and Scott (1978) investigated the effectiveness of surgery in 8000 cases, finding that quality of care depended upon internal control procedures within the specialty. However, the power of surgery relative to other groups in the hospital was not a factor in determining quality; it was the extent of power wielded by the hospital's administrators that was the determinant of quality of care.

The routine application of judgement was the topic of Knafl and Burkett's investigation of professional socialization within orthopaedic surgery. Because of the routine nature of much of this sub-specialty, emphasis is placed upon the importance of developing sound clinical judgement of whether a case is appropriate for surgical or non-surgical disposal. Socialization enables the development of this judgement, and the adoption of a 'treatment philosophy' which guides decision making, especially in the range of cases where a number of options are equally plausible. Treatment evaluation, on the other hand, is not collectively emphasised during the socialization process (Knafl and Burkett, 1975). In an earlier study (Burkett and Knafl, 1974) the authors suggested that in comparison with other sub-specialties in surgery, this emphasis on disposal judgement had the consequence of turning orthopaedic surgery from a technical enterprise into an esoteric arena of expertise.

The final study in this section examines surgery and its setting, the operating theatre, in terms of the unique

structural properties of that frame (to use Goffman's (1974) term) of interaction, rather than, as some of the above studies have done as a consequence of their interactionist leaning, as just another space, albeit an unusual one, in which the micro-rules of closure and negotiation may be explicated.

The study, by Katz (1984), consists of an ethnography of the operating room (theatre), and derives from an anthropological as opposed to sociological tradition in its emphasis on structure, spaces and timing. Its detailed description of the operating environment offers a number of suggestions as to how the everyday business of surgery is managed, and makes conclusions about surgical power and authority which have particular bearing on the present study. For these reasons it is reviewed in some detail here.

Katz: ritual in the operating room

An examination of the functions and efficacy of sterility procedures in the operating rooms (theatres) of an American teaching hospital led Katz to conclude that their symbolic and communicative functions possessed ritual as well as 'purely' scientific characteristics (op cit:335). In terms of physical space, boundaries delineated degrees of cleanliness, from the least clean (offices etc.) to the sterile operating room (OR) (ibid:336). Before an operation, in the second most clean area, the 'aseptic core', the ritual of scrubbing is undertaken, according to a highly routinised schedule. This is followed by rituals of dressing (ibid:337-8). Katz describes the maintenance of sterility through rules of contact: sterile objects remaining sterile if in contact with another sterile object (S c S → S); similarly with non-sterile objects' (NS c NS → NS); sterile objects being de-sterilised if in contact with the non-sterile (S c NS → NS). These rules of contact govern procedures in the OR (ibid:338-9).

However, Katz points out that operations are also defined by their degree of cleanliness. Eye operations are clean; duodenal operations are contaminated, colonic operations are dirty, gall bladder operations are 'clean-contaminated'. Additional rituals are employed in dirty or contaminated operations to protect the patient and staff from contamination from within the patient. In these procedures, non-sterile staff wear an additional (non-sterile) gown discarded after the operation (ibid:340-1).

Three phases of the operation are described. The first: incision transforms the scalpel from S to NS by contact with skin (S c NS → NS). Blood prior to incision is dirty, but the patient's blood during the operation is clean, and instruments are not transformed by contact with it (S c S → S).[3] Thus the rituals of the first phase re-define the patient as sterile. Katz argues that these rituals are accompanied by silence and tension, but that once the 'technical tasks become routinised', tension evaporates (ibid:342). During the second phase: excision and reconstruction, new definitions of the sterile again occur. A gallbladder to be removed is treated as sterile until excised, after which it is treated as non-sterile. If an emergency occurs, rituals of segregation of sterile and non-sterile may be suspended (ibid:344). Katz explains the lifting of tension at the end of this phase as a consequence of the 'routinisation of rituals'. The third phase, closure, is accompanied by joking, de-briefing and social chit-chat.

Katz offers two analytical conclusions to her ethnography. Firstly, there is discontinuity between definitions in the OR and outside, which support the physical boundaries around the surgical space. These contribute to a mental set in which staff behave dispassionately towards the body and its contents. Rituals exaggerate this discontinuity, they 'make salient .... the boundaries of categories' (ibid:346); as such they serve to classify objects and events during periods of dangerous transition where there may be confusion between categories.

Secondly, ritual in the operating room provides autonomy of action to participants by defining and implementing the limits of the system. The surgeon gains autonomy in the OR only when all the rituals associated with becoming sterile have been completed - up to that point he (sic) is seriously restricted in activity. If rituals of handling sterile instruments are not followed, autonomy is restricted. The ritual of anaesthesia permits staff small-talk and joking which would be prevented with a conscious patient (ibid:347-8).

The rituals of the operating room, Katz found, were never themselves the object of joking; they are not open to question, they are firm. They provide participants 'with an unambiguous understanding of precisely which categories are operative at a certain time', they serve to separate and make sharp otherwise indistinct and therefore ambiguous categories (ibid:349-50).

Katz's study is distinctive for a number of reasons:

1. It focuses upon, and is exclusively concerned with, the central focus of the surgical enterprise, the operation and its associated procedures.

2. It supplies a detailed ethnographic account, and grounds its analysis of actors' categorisations of cleanliness in this data.

3. It problematises the nature of technical activities, recognising the social construction of definitions upon which the techniques of sterility are based.

4. It offers a potential connection between the minute-to-minute activities in the OR and the ongoing enterprise of doing surgery, in its consideration of participant autonomy.

There are also a number of difficulties in the analysis. Firstly, Katz is operating with a definition of ritual which she acknowledges ignores its normal association with non-rational, mystical, sacred and expressive behaviour. Yet she is willing to distinguish routines which are 'ritual' because they possess symbolic and communicative functions, from the merely 'routinised' behaviour that occurs in the OR. It remains unclear in the essay what criteria Katz has used to distinguish between the ritual and the routine - the implication is that there is some underlying and irreducible 'technical' rump of practices unaddressable by social analysis. Katz's position has the consequence of extracting that which she claims is 'ritual', which alone has consequences in structuring the social order of the OR, all other activities being 'purely' scientific.

As a corollary to this objection, what consequences of assigning a label of 'ritual' to certain practices are there in terms of actor validation? Bloor has argued (1983:172) that although actors' pronouncements on findings are not a source of validation, the responses thus generated can be a valuable additional data resource. Did Katz submit her analysis to the actors she studied, and what was their response? For example Katz notes that sterile paper towels 'provide only a minimal material barrier against airborne bacteria yet serve as a symbolic shield separating fields of sterility and non-sterility' (Katz, 1984:340). What is the validity of this judgement about the relative 'technical' and 'ritual' components of this practice? What did her informants say about her judgement? On the other hand, in the next paragraph, Katz describes the use of a coloured antiseptic skin cleaner which 'transforms the dirty body of the patient into a clean area' (ibid). Is Katz accepting that a 'real' i.e. technical transformation has occurred, or that this is another ritual activity, or that it possesses characteristics at both levels?

By making this distinction between the ritual and the routine, an impression of the arbitrary is introduced, and the validity of the analysis must be questioned. This problem is re-visited in the next chapter when structuralist methodology is considered, in Chapter 7, where the nature of 'ritual' is appraised.

Finally, on the issue of autonomy, the issue of the division of labour within the OR is not addressed. It is unclear whether the ritual/routines of the operation enhance the autonomy of all personnel, or only that of the surgeon and possibly his (sic) assistant. The preparatory work involved in these rituals must have a consequence for the autonomy of the nursing and ancillary staff. What happens if one of these, or the anaesthesiologist (anaesthetist) jokes during the prohibited transitional stage - might that have consequences for their autonomy? By not addressing the power relations within the operating room the discussion of autonomy remains uni-dimensional, for it does not relate the detail of practices to the wider issue of the privilege and authority of the surgeon in relation both to the personnel in the OR, in the hospital, and in society. For autonomy read power.

Katz's study provides a starting point for the present study, by recognising that the 'technical' is also 'social'. In the coming chapters the techniques associated with surgery: resection of lesions, isolation, sterility, anaesthesia, and the reproduction of these practices through the agency of the surgical participants will be subjected to investigation, to determine the social significances which co-exist with their technical applications. But the object will be to inform the specifically sociological (as opposed to epistemological) topic of power. Giddens has suggested a model of social process ('structuration') in which social structures impose conditions (acknowledged or unacknowledged) upon agency, but agency, by thus mediating social structures, has consequences (intended or

unintended) which reproduce those structures; structures are both 'the medium and the outcome of contingently accomplished activities of situated actors' (Giddens, 1984:191). In this study of surgery, that which is to be appraised is the way in which agency mediates and reproduces the wider social structural power relations, the authority and the privilege associated with surgery.

By recognising those social structural properties associated with the power, the authority and privilege, of surgery as the outcome, as well as the medium through which the everyday techniques of the surgical enterprise are accomplished, enables ethnography to contribute to an analysis of the significance of surgery to its sociocultural context. While a 'macro' study of the power of surgery, for instance that of Flood and Scott (1978) described above, is forced to define what is to be accepted as 'power' before it may be studied; such a methodology permits a flowering of the concept as analysis proceeds. The intention of this study is to enable just such an efflorescence of explication, to inform sociologically the ways in which surgical authority and privilege articulate with the social structures of our society.

Having said that, thus far in this chapter, the notion of power has remained undefined. It has been asserted that it consists of two distinct components: authority and privilege, and that these must be studied in unison if the analysis is not to be impoverished. Both entail central topics in sociology: legitimation, consensus and continuity, conflict and change, domination, representation. Both are concerned with the ways human beings think about the world. Within the sphere of the medical, power is concerned with the social construction of disease categories, as Turner (1987:4) has it, the classification and regulation of individuals by professional groups into categories such as 'illness', 'sin' and 'deviance'.

Both at this level, the classification of individual experiences of sickness, and at the 'macro' level of inequalities of power, Turner suggests the concept of social role, and in the field of health and sickness, the sick role, is central to an understanding of power (ibid:4-5). It is to this concept, discussed by Parsons and many others, that this review turns.

Power, society and the 'sick role' of Talcott Parsons

The 'sick role' is one of the best known topics in the sociology of health and illness and has been widely exegesised. Parsons' formulation (1951) was part of his project to develop a functionalist analysis of American society based upon an 'action frame of reference' - that is, one grounded in an explication of the motivational mechanisms of the social process; as such it reflected Parsons' interest in psychoanalytical theory (Gerhardt, 1979). Parsons focused upon Western medicine as an example of a culture-bounded institutionalization of a practical problem in all societies, that of health (Parsons, 1951:429). The criticism of the sick role that it is culture-bound, and only applicable to a narrow range of illness is therefore (while legitimate), not an appropriate criticism of the wider Parsonian project which, it may indeed be argued, permits comparison of cross-cultural definitions of what it is to be sick (Turner, 1987:54), albeit from within the limitations of a functionalist perspective.

Parsons' description of the sick role as appertaining to modern American society, consists of a 'mechanism' by which episodes of sickness are socially defined as self-limiting, legitimate deviations from the normal social role in capitalist society. Two rights, the right to be exempt from normal social duties concerned with work and family, and the right to be free of responsibility for the illness episode, are balanced by two obligations, to want to return to the normal social role, and to seek competent medical advice and treatment.

These four components of the sick role, of the 'potential patient' role (Parsons, 1951:476), complement characteristics of the doctor role (Gerhardt, 1987:115), which is constituted by application of an ideal type based upon the 'pattern variables' which together make up the social system surrounding sickness and therapy: universalism, affective neutrality, collectivity-orientation, functional specificity and achievement (Parsons, 1951:433-5, 454). The latter pattern-variable, that of achievement vs ascription, is de-emphasised in some exegeses of Parsonian medical sociology (for example Morgan et al., 1985:57; Turner, 1987:41; Hannay, 1988:153), perhaps as a consequence of the simplification of the model of the sick role and its underlying pattern variables in explanations of aspects of doctor-patient interaction. The result is unfortunately to obscure one of the ways in which the authority to heal is legitimated in Western society, through its grounding in a body of knowledge which must be achieved: one basis for the power of the professional doctor.

This lacuna, and a number of others, derive from a reading of the sick role as a description of doctor-patient interaction. When it does not live up to expectations (the most extreme example being the attempt by Arluke et al (1979) at an empirical test of the four components of the sick role against the expectations of actual patients based on the (wrong) argument that the model is 'meant to apply to the behavioural expectations of those people already in the sick role' (Arluke et al, 1979:31)), it is criticised as an ideal type which does not do justice to the variation in actual interactions, as a consequence of ignoring different models of sickness (Szasz and Hollender, 1956; Barofsky, 1978)), the moral characteristics of patients (Jeffery, 1979; Murcott, 1981), or the type of illness (Freidson, 1970). Rather, Parsons' project was to demonstrate how deviance from social norms is channelled away from potentially disruptive challenges to the social order.

From this perspective, as Parsons makes clear

> .... both the sick role and that of the physician assume significance as mechanisms of social control, not only within the bounds of the common-sense definition of the traditional functions of the physician, but much more broadly, including intimate relations to many phenomena which are not normally thought to have any relation to health (Parsons, 1951:477).

This control occurs in two ways, and the physician is implicated in each. Firstly, the sick are insulated from other deviants within a circle of non-deviance: their families and 'above all', physicians, preventing group formation and any establishment to a claim to legitimacy. The increase in mental illness, Parsons suggests, may be a channelling of deviants into a sick role, which 'from the point of view of the social system ... may be less dangerous than some of the alternatives' (ibid:478).

Secondly, the sick role is reintegrative as a consequence of the 'institutional features of the physician's role in its particular meshing with the sick role' (ibid). Parsons and Fox (1952) were to elaborate these aspects of the doctor role much more explicitly in terms of psychoanalytic theory, equating the doctor with parent, patient with child, but in Parsons' original formulation he is clear: deliberate psychotherapy is:

> .... only that part of the iceberg which extends above water. The considerable larger part is that below the surface of the water. Even its existence has been largely unknown to most psychiatrists, to say nothing of laymen (Parsons, 1951:478).

The submerged iceberg consists of the 'institutional features', the five pattern-variables of the doctor role, the 'automatic or latent' mechanisms of social control which articulate with the pattern-variables of the sick role to ensure that the patient role is a legitimate but temporary and undesirable status to occupy.

Parsons explains the conditions under which the physician role impinges upon the patient to assure s/he adopts the sick role. Firstly:

> It is not only that the patient has a need to be helped, but that this need is institutionally categorised, that the implications of this need are socially recognized .... It is not only the sick person's own condition and personal reactions to what should be done about it which are involved, but he is placed in an institutionally defined framework which mobilizes others in his situation in support of the same patterns which are imputed to him. .... The fact that others than the patient himself often define that he is sick, or sick enough for certain measures to be taken, is significant (ibid:475).

The potential patient is categorized, and provided with a new status. (This extract may have been overlooked by those writers who have asserted the importance of lay definitions of illness upon patterns of consultation and adoption of the sick role.)

The passage through and beyond the sick role (to normal social role) now requires a further agency for re-definition to occur. It is:

> .... the collectivity-orientation of the physician, and (her/his) universalism, neutrality and specificity (which) make it possible for the things he has to do to perform his function to be made acceptable to the patient and his family. These include **validation of his professional authority** and **justification of the 'privileges'** he must be accorded (ibid:475) (my emphasis).

These four pattern-variables of the doctor role (and according to the Western model, where the 'primary cultural tradition defined as relevant to health is science' (ibid:476)), the fifth pattern-variable, the requirement for an achievement as opposed to ascription qualification, enable healing to be carried out, that is - for the patient to achieve re-integration, to move beyond the patient role, to no longer be governed by the pattern-variables of the sick role.

From such a reading, it becomes clear that Parsons identifies the power of the doctor to be a consequence of her/his adherence to the pattern-variables of the physician role which enable healing to be achieved. The pattern-variables define two aspects of this power. Firstly, the authority whereby what s/he does is accorded validity as 'healing', and the rights to define what is healing and who shall do it. Secondly the personal rights or 'privilege of access'[4], the attachment to the individual physician of the positive valuation which adheres to the (positively evaluated) status of re-integration, in contrast to the (at best neutrally evaluated) status of sickness.

And accordingly, any deviation from the pattern-variables, for example an inappropriate response by a doctor during an internal examination, as described by Emerson (1973), may threaten the enterprise by which what occurs is designated as 'healing'. Professionalisation is the process of adoption of the pattern-variables by the neophyte.[5]

The achievement of Parsons is thus to demonstrate how the power invested in the physician, and its manifestations as her/his authority and privilege - control of the means of healing and moral right to exercise healing - are essential to the process whereby people pass through episodes of deviancy from health, and are re-integrated into society. The failure of many critiques of Parsons lies in the assumption that the focus of analysis is 'sickness'. The significance of Parsons' analysis is its explanation of **healing**.

The analysis provided in Chapter 10 of The Social System is therefore of importance to the present topic, the power of surgery as a healing process. It suggests that the power of healing is mediated through the everyday activities of participants, in the adoption of patterns of behaviour (the physician and sick roles) structured by properties in the social system (the pattern-variables), which in turn ensure the continuity of that social system. As such, it is a model of healing which offers potential for understanding precisely how (and under what circumstances) the social system ensures that such roles are adopted.

Parsons' position is, however, problematic. Firstly, the formulation outlined above is strongly deterministic, secondly, and as corollary, it possesses that characteristic of functionalist accounts, that it appears to impute intentionality to 'society' (Giddens, 1977:106). Consequently, at its baldest the position counter-factually requires that doctors have to adopt the pattern-variables associated with the physician role to fulfil the needs of society for a means of healing the sick. Thirdly, it implies that 'society' is unitary in its 'needs'; it identifies conflicts of interests, but marginalises them as deviances, non-legitimate. The authority of the physician, Giddens argues, is for Parsons 'no more a form of power than force is a form of power' (1978:606). As such it is a conservative perspective (Giddens, 1977:121).

Gerhardt's evaluation of Parsons' contribution to medical sociology is more lenient, noting that physicians'

> beneficial although mildly repressive way of dealing with the antisocial forces of deviance is hailed by Parsons as modern society's ever-expanding version of social control. In fact, he surmises, treatment rather than punishment has become more and more the prevalent paradigm of how the ongoing social order in a democratic society is to be reconciled with the liberal values of freedom and equality (Gerhardt, 1987:127).

Rejection of such conservatism or liberal humanism is the objective of Waitzkin and Waterman's (1974) account of the sick role. They offer as an alternative, Marxian vision, a conflict analysis which

> suggests that the sick role prevents individuals and groups from addressing the **real** sources of strain which may reside in the social structure. Insofar as adoption of the sick role relieves strain which otherwise could become a focus of dissatisfaction and conflict, it becomes a conservative (and sometimes counter-revolutionary) mechanism inhibiting social change (Waitzkin and Waterman, 1974:35). (my emphasis)

However, the analogies which this analysis attempts to draw between the economic system and the health system, the authors agree are 'somewhat tenuous' (ibid:34), and furthermore, fail to counter the ascription of teleology to society, albeit 'capitalist society'. The claim that economic exploitation is the 'real' source of strain implies that somehow the experience of illness is just another form of 'false consciousness'. Indeed, this Marxian re-reading does nothing to unravel the relationship between agency and structure outlined in the last section. By re-introducing macro-analysis, it dispenses with

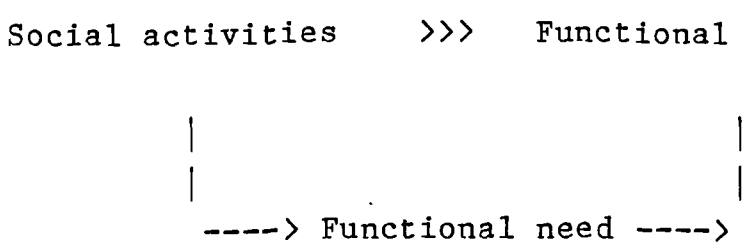
one of Parsons' achievements: the demonstration of intentionality in the interactions of doctors and patients, albeit an unproblematised intentionality.[6]

A non-functionalist reading of 'the sick role'?

While a conflict-theory counter-blast to consensus theory is welcome, what is also necessary, it is suggested here, is an analysis which recognises the ways in which agency and structure are mutually constitutive, that is, to use Giddens' phrase, one in which there is a 'duality to structure'. Social structural rules and resources are 'not only the means by which social life is produced and reproduced as on-going activity', but also are 'produced and reproduced by such activity' (Giddens, 1977:118).

Is it possible to re-cast the version of power as derived from a reading of Parsons on the sick role in such a fashion? The following formulation draws upon Giddens' critique of functionalism and proposition of an alternative 'structuration' analysis of the relations between social structure and agency.

Functionalist analysis posits a schema whereby social activities are structured by the functional need of society such that the consequence is functional for society, thus:

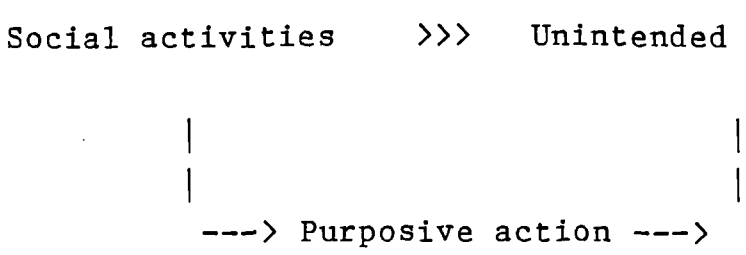


(Giddens, 1984:294)

Social phenomena are 'explained' as a response to the needs of capitalist society, 'as a result of some unspecified social

forces which such needs call into play' (ibid). But 'functionalist explanations are not explanations at all' (ibid:295) because they do not show the mechanisms which intervene between need and consequence, and 'moreover, have the dangerous side-property of implying that a higher degree of cohesion exists than in fact be the case in the social system to which they refer' (ibid).

Giddens offers an alternative which he suggests accounts for these social processes in terms of a reciprocity of structure and agency:



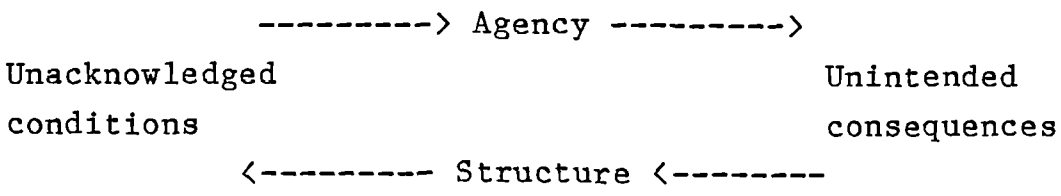
(ibid:294)

In this schema, the 'mechanisms' are constituted not in structure but within human agency:

> a given set of social activities .... is interpreted as purposeful actions .... carried on in an intentional way, for certain reasons, within conditions of bounded knowledgeability. Specification of those bounds allows the analyst to show how unintended consequences of the activities in question derive from what the agents did intentionally.. .... the actors have reasons for what they do, and what they do has certain specifiable consequences which they do not intend (ibid).

Practices 'followed in a given range of contexts are embedded in wider reaches of time and space, ... (in) relation to institutionalized practices' (ibid:298), that is to say,

within social systems. Social structures impose conditions upon agency, however the production and reproduction of structure can only be achieved at the level of interaction. Agents' activities, in addition to having intended consequences, also have the unintended consequence of reproducing structure. This reciprocity may be diagrammatically represented thus:[7]



The analytical value of such a model, it is suggested, lies in its recognition that it is only through human agency that social structure can be constituted, while at the same time recognising the limits of agency in the directing of history. Giddens recapitulates Marx's comment when he states that 'human history is created by intentional activities, but is not an intended project; it persistently eludes attempts to bring it under conscious direction' (ibid:27).

Analysis therefore progresses through the recognition of the knowledgeability of human agents, but also of the boundedness of that knowledgeability, and the necessity to contextualise social activities in terms of social structural rules and resources.

Because of this emphasis upon the primacy of situated human activity, these social structural rules and resources must be articulated through agency. This is reassuring methodologically, for it means that potentially it is possible to 'read off' underlying structural properties from details of ' activities. However, Giddens argues that any such reading will encounter transformations by which agency reproduces structure and structure mediates agency (ibid:28-9).

Giddens identifies three modalities within the rules and resources of social structure: (a) signification of shared meanings, (b) the distribution of resources (domination), (c) moral or evaluative rules (legitimation). Each modality is concerned with allocations and exclusions. They may be defined as the spheres of cultural interpretation and production, distribution of resources, normative rules of conduct. These relate to modalities at the level of interaction as follows:

STRUCTURE	signification	domination	legitimation
INTERACTION	communication	power	morality

(Giddens, 1977:132)

Interactions are conditioned by structural modalities, such as to (a) communicate meaning through the reproduction of 'taken for granted' knowledge about cultural forms, (b) facilitate resource allocation by the exercise of power, (c) judgementally evaluate conduct (ibid:132-4). They have the unacknowledged consequence of reproducing the structural rules of signification, domination and legitimation, through the reproduction across time and space of such situated social activities, and furthermore, thereby constituting the social systems which consist of such regularised social practices.

Giddens also argues (1984:31), that in practice structures of signification are always associated with those of domination and legitimation. Domination-signification structures (D-S) determine definitions of elements in a discourse in terms of control (of things: allocation, of people: authority); while legitimation-signification structures (L-S) define elements by recourse to rules of conduct. Complex institutions such as the law or politics mobilise all three modalities (ibid:33-4). For example, immigration law controls the right to citizenship (L), and thereby significates (S) nationality and authorises (D) access to resources of work, residence = **L - S - D.**

Turning once again to the issue of authority and privilege in the healing process, how is the Parsonian position altered by adoption of a non-functionalist reading? According to the functionalist rendering, the authority and privilege of the doctor is mediated through the physician and sick roles, to meet the functional need of conditionally legitimated deviancy and re-integration:

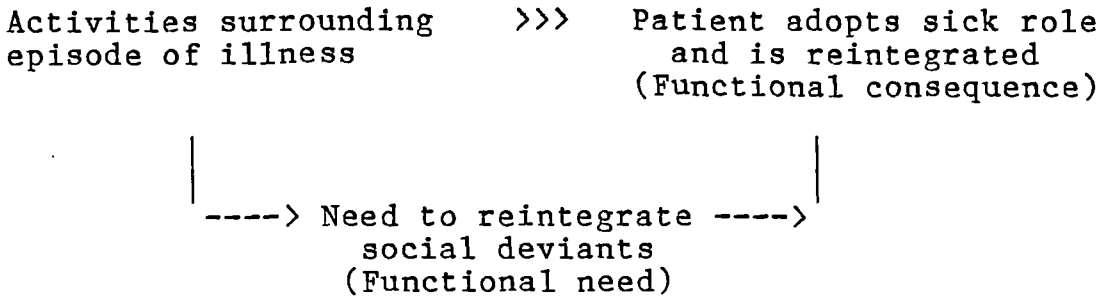


Fig 1.1: The Parsonian model of healing

As has been pointed out above, this analysis fails to demonstrate precisely what the 'mechanism' is that links the need to the consequence. The alternative, which recognises the purposive characteristic of agency appears thus:

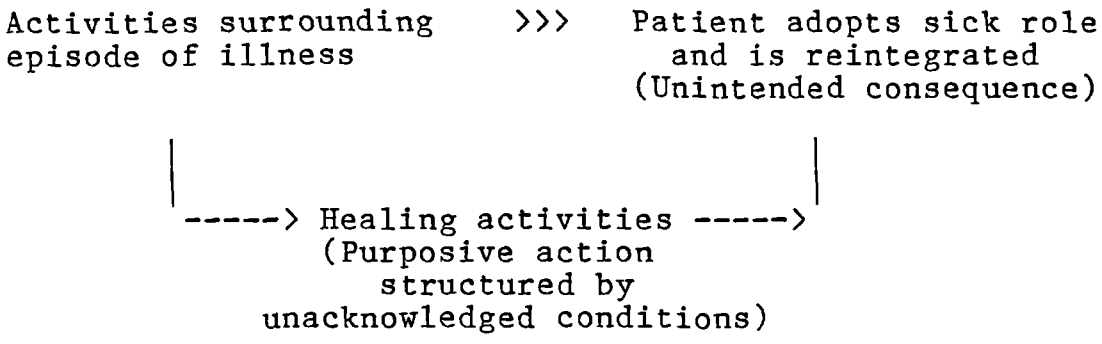


Fig 1.2: The structuration model of healing

This formulation removes any imputation of teleology to 'society' by recognising the bounded knowledgeability of the actors (doctor and patient), who draw upon rules and resources

(structure) to organise the encounter, but who remain unable to see beyond the bounds, to contextualise their interaction. The unintended consequence is that the allocations and exclusions associated with the modalities of structural rules and resources reproduce imbalances in rights to cultural definition, power and moral attribution within the encounter, and consequently within the wider social system.

Modality A: Cultural interpretation

At the level of structure, this reflects rules of definition (social production) of healing, sickness.

At the level of interaction, it is concerned with communication and the 'competence gap' associated with definitions of disease sickness, and healing.

Modality B: Resource allocation

At the level of structure, the unequal distribution of resources between doctor and patient.

At the level of interaction, the authority of the doctor in terms of knowledge and access to means of healing: the power of the doctor to dispense knowledge and control and dispose of bodies; the issue of 'compliance'.

Modality C: Normative evaluation

At the level of structure, the legitimation of sickness, of particular therapies as legitimate' healing', and the doctor as healer.

At the level of interaction, the doctor's rights (privilege) of access to the sick, to make claims of her/his therapy, and to make moral evaluation of the sick and the healed.

In terms of a reconstruction of the Parsonian model of the sick and physician roles, and the underlying pattern-variables, three elements need first to be particularised to the topic of sickness/healing.

Firstly Structure, refers to the rules and resources which are the unacknowledged conditions of action. These unacknowledged conditions which structure the activities surrounding healing are, by definition, equivalent to the unintended consequences of the interaction. They are concerned with signification (what is defined as sick, healed), domination (the unequal access to, and opportunities to allocate, healing resources by patient and doctor) and legitimation (the moral rules of conduct for the sick and the healed).

Secondly Bounded knowledgeability. The actors possess culturally defined resources of knowledge about what it is to be sick and to be healed, and with this knowledgeability 'make sense' of their interactions. However it is a bounded knowledgeability, which does not acknowledge certain conditions of action concerning rules and resources; allocations and exclusions, although some others may be acknowledged. The precise positioning of the bounds determines the extent to which the encounter is routinised or institutionalized. In the ideal typical encounter it results in patients and doctors accepting the model of healing outlined in the 'sick' and 'physician' roles.

Thirdly Agency, in this context refers to the situated purposive activities carried out by patients, prospective patients and healers in the sickness/healing encounter. These activities produce and reproduce social systems through the three modalities of communication (attribution of appropriate meanings in defining sick and healed states), power (the disposal and control of the patients' body and biography during sickness and healing), and morality (the evaluation and judgement of the moral conduct of the sick and the healed). In the (Parsonian) ideal typical encounter the interaction will, consequent upon the unacknowledged conditions of agency, lead to the adoption of the patient role, and subsequent re-integration of the healed person into the social system.

Particularising these three foci demonstrates how the Parsonian model has been reconstructed. The sick role is now a culturally specific reflection of the bounds of knowledgeability of patients. To be 'sick' is to adopt an identity, a social position and a moral label. To be healed re-casts these three ascriptions. Similarly, to be a healer (to adopt the physician role) is to accept identity, status and moral position. The sick and physician roles reflect the bounds of knowledgeability associated with illness and healing in Western society.

The focus of attention shifts from the social system, and any functionalist attribution of rationality to it, to the agents' rationality and motivation. In this reading a potential patient intentionally enters the realm of the ill, adopting identitiy, social status and moral position attached thereto, because of benefits accruing as a consequence. Sickness is significated as a definite category, it involves a small amount of status loss, but it is conditionally legitimate as long as certain criteria (for example, as advanced by Freidson (1970) in his six-way analysis of illness) are fulfilled. In comparison with alternatives such as 'unemployed' or 'criminal', the category of 'sick' is attractive, especially as it is associated with the positively evaluated category 'healed'. Potential patients are actively motivated to take up the 'sick role'.

The bounds of knowledgeability must therefore incorporate some at least of the four rights and duties described by Parsons. Arluke's empirical assessment (1979) of which patients acknowledge which rights and duties now becomes of interest.[8]

If these are the acknowledged conditions and intended outcomes, there are also conditions and consequences outside the bounds of knowledgeability, concerned with the structural modalities associated with the encounters between healers and clients in Western society, that is, the rules and resources concerned with signification, domination and legitimation.

Taken together, the on-going social activities surrounding healing, and the structural properties of the healing encounter, enable an understanding of how healing and healers, contribute to social integration. It is to this issue that this chapter now turns.

Some new research questions

In addressing this issue of the contribution of healing to social order, a number of points may be raised. Firstly, what part, if any, in an analysis of medical power is played by the second-order variables which Parsons considered organised the sick and physician roles - namely, the pattern variables?

Their position now appears ambiguous. On the one hand, the five Parsonian pattern variables might be seen as representations of the structural modalities underlying the agency of sick and physician roles. But they are also representations of the bounded knowledgeability which Parsons brought to his description of the encounters surrounding health and illness in Western society. They are a resource, but not for an understanding of the social order, but of the bounds which exist around the enterprise of healing.

Allocating modalities of signification (S), domination (D) and legitimation (L) to the Parsonian pattern-variables of the physician role demonstrates this ambiguity:

Achievement D - S - L

[the allocation of knowledge and training (D) significate what it is to be a doctor (S), and the moral right to heal (L)].

Functional specificity D - S

Universalism D - S

[the access to resources (D) significates the doctor role (S)].

Collectivity orientation L - S

Affective neutrality L - S

[the 'code of honour' of the doctor legitimates her/his

privilege (L) and thereby signifies 'doctor-ness' (S)].
The task may similarly be performed for the patient role, with its identical pattern-variable normative orientations (see Gerhardt, 1987:117). Achievement, universalism and affective neutrality all legitimate and therefore identify the ill person as sick (L - S); its functional specificity is the same as the doctor's, in its concern with the allocation of healing resources (D - S). There is a D - S modality to collectivity orientation, as noted in this extract: 'the patient has a very obvious self-interest, ... but once he has called in the physician .... he has assumed the obligation to co-operate with that physician in what is regarded as a common task' (Parsons, 1951:438).[9] His is indeed a consensus account!

'Privilege' is thus Parsons' (consensus) version of the legitimation-signification complex concerning conduct, (=the right to heal), while 'authority' is the domination-signification complex of control of healing. However, in Parsons' schema the D - S variables are allocative - command over objects, not authoritative - control of people: the social control of the patient, by which s/he accepts the sick role and in time is re-integrated into society, does not act through the physician but through the social forces which enable functional needs to be met.
This exercise neatly demonstrates the deficiencies of the functionalist approach, and the bounded-ness of Parsons' knowledgeability of healing, grounded in his too consensual understanding of the social order. Despite this shortcoming, the dual aspect of power - control and conduct, authority and prestige has been clearly articulated.

A second point concerns the problem of discerning the characteristics of the structural modalities. It is insufficient to study the modalities at the level of agency - the resulting analysis would probably look either like a Parsonian or Marxist explanation, for it would have to make

assumptions about the nature of the 'underlying' social system. However, the resource derived from a recognition of the bounded-ness of knowledgeability and its obverse - the unacknowledged conditions of action - provides an additional means of approaching the nature of the structures within which agency produces and reproduces the special system surrounding the healing enterprise.

In terms of the present topic of surgery, the question becomes: **'How do structural modalities of signification, domination and legitimation contribute to the authority and privilege attributed to the surgical enterprise?'**

Thirdly, it becomes clear that, framed in this manner, answering this question entails a generalising hypothesis about the social significance of healing in Western society. The essential corollary of the first question is **Why do the structural modalities take the form that they do?**

This is the question which tempts answers such as 'serving the needs of society', or 'serving the interests of capitalism'; it is all too easy to erect such 'explanations'. Finding an answer to this generalised question which does not simply replicate such an 'explanation' requires research which can integrate the specifics of social encounters in the surgical milieu, through the spatially and temporally embedded routines which they thus produce and reproduce, to those features of society by which surgery and healing in general is institutionalized. As such it is a task which requires not only ethnography and interviews, but semiotic and historical analysis, consideration of material culture and cross-cultural data, perhaps even literary sources. The logic of such a methodology is discussed in chapter 2.

To that end, the specification of a defined healing specialty such as surgery is a reassuring restriction of the scope of research which otherwise would be beyond the bounds of a

thesis. It is possible however, that by addressing the particular issue of surgical healing and the specific, detailed cultural forms which surgery takes in Western society, that generalised hypotheses about the meanings attached to health, sickness and healing may be constructed, and to some extent tested. With that objective, it is now necessary to set out the hypotheses from which this piece of research began.

A hypothesis, two corollaries and a codicil

Main hypothesis

The power of surgery as a mode of healing in Western society is a consequence of the cultural meanings of the particular structures of signification, domination and legitimation which surgery exhibits, both in its institutional arrangements and its everyday practices.

First corollary

Investigation of the techniques and practices of surgery, and of the surgical discourse, rather than of the personal or group characteristics of the surgical professional, will provide both necessary and sufficient explanation of the high status of surgery in Western healing.

Second corollary

The cultural meanings associated with surgery which make it a powerful technique of healing will have general applicability to an explication of the social significance of healing.

A methodological codicil

Neither micro nor macro methodologies are sufficient in addressing the hypothesis. Both fail to recognise fully that structure is both the medium and the outcome of situated and intentional social activities. The methodology adopted must be capable of integrating analyses of interaction and of spatio-temporal institutionalizations and structures.

With this framework for investigation of the power of surgical healing identified, it is now appropriate to outline the shape of this research report.

A plan of the research report

Chapter 2. Context, methods and methodology
This chapter describes the ethnographic field setting and considers the problems of overcoming the micro-macro divide.

Chapter 3. The circuits of hygiene
An ethnographic introduction to the field: this chapter provides a detailed description of the activities carried on in the operating theatre and its immediate environs, the stages of induction, resection and recovery undergone by patients during surgery, and the articulation of these stages with procedures concerned with hygiene, entailing the movements of staff, patients and instruments in ordered sequences designated 'circuits of hygiene'. It is suggested that these circuits of hygiene signify the process of alteration effected by surgery.

Chapter 4. The history of surgical sterility
An excursion into the nineteenth century history of surgical sterility discovers that the innovations concerned with hygiene reflect a moral order. The surgeon identifies with Culture rather than Nature as a consequence of the messages contained within the practices of asepsis.

Chapter 5. Surgeons and Anaesthetists
The relations between these two professional groupings is symbiotic, but can result in conflict. This chapter identifies how surgical patients are both 'ill' and 'fit' and how these dual definitions are reflected in operating theatre activities.

Chapter 6. Discussion
An analysis of the findings reported in the previous three chapters

Chapter 7. Life changes, society and status passage
Cross-cultural perspectives and Van Gennep's description of rites of passage, rituals associated with important changes in the social status of individuals, are examined and elaborated in considering a life-cycle model of healing.

Chapter 8. Three case studies in surgery
Surgeons on the wards. The management of surgery. Day case surgery. Three studies test the hypotheses developed in the previous chapter concerning the transitional passage involved in healing.

Chapter 9. Discussion and Conclusions
The evidence for an explanation of surgical authority and prestige based upon surgery's use of powerful social messages concerning transition from a status of victim to one of survivor are evaluated. The relationship between medicine and social structure is considered. The methodology is assessed. Implications and proposals for further study are outlined.

CHAPTER 2:METHODS AND METHODOLOGY

Introduction

This chapter offers a brief description of the field setting in which the ethnographic material was obtained, before considering the methods of data gathering employed in this study, and the principles of methodology which have been adopted. Additional details of the techniques of fieldwork adopted appear in an appendix to this thesis, page 330.
A brief discussion in the body of the chapter and in a footnote reviews approaches which have been adopted in the social study of science and technology, which is particularly applicable to chapter 4, in which historical material relating to the innovation of surgical sterility is analysed.

The field setting

The observational and interview data reported throughout this study was gathered during an eighteen month period beginning in the autumn of 1986. The location for most of the research was the operating theatres and surgical departments of a large district general hospital serving an English city. For reasons of confidentiality this hospital has been designated 'General' hospital throughout this study. In addition a small amount of data reported here comes from two periods of observation undertaken at two other large hospitals, one in the same city as General, known here as University Hospital, and the other, Saints Hospital, a teaching hospital in another English city. No comparisons between these settings has been attempted, and as virtually all data in the study is derived from General hospital, it may be assumed except where otherwise stated that this was the field setting for the data reported.

General hospital is located at the edge of a city, but in fact serves a wide catchment area including a number of small towns and a substantial rural population. It possesses accident and emergency facilities, is a regional burns centre and has attached many and various rehabilitation units. Obstetrics are not conducted at General, but at a nearby maternity hospital in an adjoining district. Mental handicap and illness are treated at specialist hospitals within the district.

Surgery at General is organised in a department of approximately a dozen consultants. Surgical specialties are in Thoracic, Neuro, Oral, Plastic, Orthopaedic, Surgical gastro-enterology and General surgery (which in the district is defined to include urology and vascular surgery.) During the period of the research a specialist day case surgery unit (DCS) was opened at General Hospital - DCS is however not regarded as a surgical specialty but as a particular option which may be adopted if deemed appropriate.

The surgery at General takes places in ten operating theatres. These are organised into five operating suites of two theatres. The five suites are identified in this study by the names used by staff at General: Thoracic theatres; Neuro theatres; Plastic theatres; Theatres N (principally general surgery) and Theatres S (principally orthopaedic, and some general surgery). Pairs of theatres share some facilities such as instrument preparation areas and recovery rooms. The layout of these operating theatre suites (hereafter OT) is examined in great detail in the next chapter. In addition to these ten theatres, there are two further operating spaces at General; one is attached to the endoscopy clinic in the department of thoracic surgery, close to thoracic theatres, and a third neuro-theatre which at the time of the study was not in regular use for financial reasons. This latter theatre is described in chapter 5.

During the period of data collection the entire range of surgery at General hospital was observed, and all the OTs were visited at one time or another. A decision was taken however, to exclude surgical cases admitted via the accident and emergency (A and E) department, so the data recorded refers entirely to elective surgery. Within this sub-group a small number of operative procedures were conducted as a consequence of an original admission through A and E. The vast majority were called for admission from a waiting list, although in the case of neuro-surgery the urgency of the cases might mean direct admission from out-patient consultation, or admission within a day or two from such a consultation. Some of the organisational arrangements concerning admissions are considered in Chapter 8.

At the time when this study commenced, most surgery was being conducted at General hospital according to a tradition model of admission the day previous to surgery, followed by a period of in-patient recovery. A small number of cases, principally in plastic and oral surgery were admitted as day cases, spending only a few hours in hospital. During the research period discussions on creating a designated DCS unit were completed, and a ward closed for refurbishment with the particular accoutrements needed for day case nursing. One of the theatres in the twin suite used for thoracic surgery was re-designated as a theatre for DCS, with a consequent re-organisation of surgical lists for those concerned, centralising all DCS at General hospital in a single location. The unit was commissioned in the spring of 1987, under the management of a consultant anaesthetist, Dr F. The researcher thus had an opportunity to study the social effects of this alteration in the organisation of surgery, and observations, interviews and documentary evidence related to the development provided a case study by which the model of innovative change derived in the coming chapters could be tested. This material is also to be found in Chapter 8.

Access to the field

As the data described in this study indicates, the researcher had, during the period of study, access to all the surgical spaces at General hospital, including operating theatres and all associated areas within the OT. Throughout the research into surgery the researcher was accepted by virtually all the personnel involved in surgery at General hospital as having a legitimate reason for visiting these spaces, which are off-limits to unauthorised personnel. This degree of access was largely as a consequence of a serendipitous meeting some months previous to the study with a consultant anaesthetist, Dr J, at an exhibition of surgical history. At that time the researcher had not considered using General hospital as the location of research, and had in fact instigated interviews and observations on the surgical wards of University hospital. At this latter location, initial access was via a surgeon, Mr D who had aided application to ethical committee for interviews with patients to be conducted.

However, it became clear to the researcher that at University hospital, despite the granting of a remarkable freedom of access, and the useful material gathered in interviews with patients and on ward rounds, it was difficult to make any sense of much of the proceedings which were being observed. No key informant had been found, and while physical access had been obtained, Mr D and his surgical colleagues had no interest in the research project. As Mr D put it 'We don't really understand what you're doing, but we are quite happy for you to do it' (Field Notes 4/8/6/1). This problem was soon threatening any chance of gaining sociological understanding of the structural aspects of surgery, indeed it was becoming less and less apparent to the researcher that there was anything of sociological interest specific to the setting.

The chance contact with Dr J had ended with an invitation to the researcher to discuss the role of anaesthetics in surgery and late in 1986 this was followed up. The consequence was that a series of interviews with Dr J established him as a key informant in the field, who furthermore expressed great interest in what the researcher was doing. Contact with a wide range of his colleagues in the departments of anaesthetics and surgery at General hospital resulted, and it is appropriate to consider Dr J as the most valued contact made during the research. In the beginning he smoothed the way for access to the OTs and indeed encouraged as wide an experience of surgery at General hospital as possible. Later he suggested many personnel who should be interviewed, and using his name these were obtained with no difficulty. Eventually, these new contacts in turn led to personnel without the direct influence of Dr J. Over the period of research substantive interviews were conducted with 27 personnel comprising seven surgeons, seven anaesthetists, nine nursing staff, two portering staff, two administrators. Minor interviews were conducted, often during periods of observation, with other junior surgical staff, nurses, ambulance men and medical students.

Methodological issues arising from the techniques of research used are considered below, but it is worth briefly considering the significance of Dr J as a key informant. Looking back on the relationship it is clear that rapport was achieved as a consequence of a shared interest in observation; anaesthetists spend much of their time observing patients and their responses during surgery, and consequently observing surgeons and other personnel in the OT. (For a full discussion of the interaction between surgeons and anaesthetists see Chapter 5.) Given Dr J's long and slightly jaded experience of surgeons, and his willingness to talk freely and analytically about what he saw, his anaesthetist's outlook made him by nature someone who would potentially understand why a social researcher might be interested in surgery.

Four of the other anaesthetists interviewed also seemed to have this immediate grasp of the concerns of the research, and it is probably as a consequence of this affinity that this method of access had such effective consequences in enabling the prosecution of the research here reported. Part of the research bargain indeed, seemed to be that the anaesthetist had someone intelligent to talk to during the periods of tedium during operations when, if the patient is fit, they have little or nothing to do apart from occasionally note a reading. Furthermore, this person was an 'ally' in their perception, inasmuch as they could be rude about surgeons to him, knowing it was in confidence. These factors also had a practical advantage for the researcher. When he had come into theatre as a visitor of the anaesthetist he could legitimately stand to one side, walk around the theatre and talk to whom he wished, or even leave theatre to visit other parts of the surgical complex. On the occasions where his 'sponsorship' as a visitor was via a surgeon he was continually being forced to 'come round here', to watch the details of surgical technique, even on a few occasions being made to assist the surgeon, duties which (although fascinating) reduced his opportunities to observe the social aspects of theatre life. These 'privileges' of course could not be refused.

It is appropriate to question whether bias was introduced as a consequence of this use of informants who, it could be argued, had personal reasons for providing a negative view of surgeons. Would the conclusions of the study have been the same had the principal informant been a surgeon? If not, is this a threat to validity, or in fact an assurance of validity as a consequence of having avoided the bias that a surgeon might place on issues of power and prestige? To answer these points it is appropriate to now turn to the methodology employed in the study. This specific issue will serve as a concrete case study of how the research dealt with validation in developing its hypotheses.

Towards a structuralist methodology

Curtis (1986) has suggested that scientists develop preferences for methodologies which suit the particular intellectual problem-situation which they are addressing. A methodology is in effect a 'meta-theory' of science, it imposes rules of what shall be considered an appropriate method of doing science. Any methodology is therefore necessarily contingent; and the extent of its contingency has been variously discussed by philosophers of science seeking to determine the rules of scientific 'rationality', and the influence of the social on science. Popper (1970) outlined a 'falsificationist' model to prescribe the ground rules of scientific rationality, whereby a hypothesis is tested against reality, with the object of disproving it, replacing it by one which incorporates the new data. This position has been refined, principally in response to Kuhn's critique, by Lakatos (1970), to incorporate the notion that scientists carry out such falsification within a programme of research. Kuhn argued that the influence of the scientific community is far more substantial than Popper acknowledged in determining what is acceptable science, although occasions of revolutionary science occur when 'normal' science can no longer cope with anomalies thrown up by aberrant data (Kuhn, 1962). The basic tenet of Popper's argument about how science should be done (as opposed to Kuhn's description of how it is done) has been opposed by Feyerabend (1975), who claimed that all scientific method is by its nature stifling and inimicable to original and creative science.

More recently, social theorists have entered the debate over the extent to which the social affects the scientific theories postulated to explain data. These range from the view that social conventions in science are 'mere conventions' which are trivially satisfying and undemanding, a position occupied by Laudan (1982), to the 'strong programme' of Bloor, Barnes, Collins and others (see for example Bloor 1976, 1982; Collins

1981) which takes a strict relativistic approach to the knowledge claims of science. It is tempting to further categorise (merely for heuristic purposes) the approaches which recognise the importance of social contingencies upon the development of scientific knowledge into three groupings which broadly derive from Weberian, Marxian and Durkheimian positions.[1]

Each of these groups argue in their analyses not only for their particular corner, but also for a particular methodology, which follows from their theoretical position, for instance an analysis of historically generated interests or a quasi-anthropological investigation of the social construction of reality. These methodologies are thus not neutral; they are not based in some natural logic of investigation which, adhered to, and with the adoption of appropriate methods, leads the researcher unerringly to truth. Rather, a methodology of research is intimately bound-up with the topic which it is used to investigate. It will enable a particular research question to be asked and answered in ways which will offer assurances on validity and reliability, as those notions are conceived within the scientific community within which the research is conducted. Within sociology, this has led to a situation in which the subject has been described as 'pre-paradigmatic', in that the community of sociologists remains divided as to how social theory should be formulated, and consequently what methodology of research to use. A fundamental divison has developed over the so-called micro-macro dimension of social theory, and while certain writers, recently and notably Giddens (1984), Goffman (1974), Gouldner (1971), Silverman (1985), have sought to integrate this dimension, such an integration may be illusory and resolution impossible (O'Neill 1986). Similarly division between conflict and consensus schools have prevented the acceptance of a sociological paradigm. These, and other divisions such as the quantitative/qualitative approach to analysis have had effects not only on theory but on meta-

theory, that is to say, methodology. Silverman's discourse identifies these oppositions as a limitation on analysis (Silverman 1985:xi), and proposes an eclecticism based on appropriateness, reminiscent of Cain and Finch's (1981) evaluation of methodological validity.

Silverman's alternative is a structuralist programme based upon realism (ibid:170-7), as a substitute not only to positivistic studies, which have addressed issues concerning the influence of social structure upon social phenomena, but thereby reducing human agency to epiphenomena of structure, but also to the reduction of structure in the naturalist schools of interactionism and ethnomethodology to the outcome of negotiated structuring work carried on by participants, with no recognition of any constraining or determining properties to social structure.

He argues for a synthesis based on Bhaskar's realism: on the claims (1) of the intentionality of human agency, (2) of the reality of constraining social structures, and (3) that structures are the condition of social action and are reproduced and changed by it (ibid:80). These propositions may be compared with Giddens' attempt at a resolution of the micro-macro division: his formulation of 'structuration' and the duality of structure whereby structure is both mediated and reproduced by agency (Giddens, 1984:281ff), which was outlined in the previous chapter. While it is recognised that there are differences between Bhaskar and Giddens, principally concerning the 'reality' of social structures, any attempted synthesis of this kind requires study of both structure and social action, setting out to discover, through ethnography and grounding theory, the forms that structures take rather than presuming them or imposing grand theoretical notions such as 'false consciousness' (Silverman, 1985:78-9).

Silverman bases his argument for an ethnographic methodology grounded not in interactionist but in a structuralist social theory on a number of postulates:

1. Macro studies have resulted in the construction of analytic 'black boxes' between inputs from social structural forces and output of social phenomena, for example between educational structures and student attainment. Study of the intervening processes in reference to the structural constraints, for example the social organisation of teaching, opens up these black boxes to analysis (ibid:9).

2. As research progresses, data focuses attention upon particular phenomena, and generates theory (theory is grounded in data - following Glaser and Strauss (1967)). This leads to 'substantive theory' which can then be broadened to more general concerns, leading to 'formal theory' which seeks to explain a process in a range of settings (Silverman, 1985:24).

3. Anomalies and failures of theory to explain deviant data are not to be regarded as errors or chance events, but research opportunities to test theory and refine it. Concentrating on small scale details of ethnography can illuminate macro issues (ibid:10-15, 21-2).

4. Naturally occuring data, collected by ethnography, provides the analyst with the means to describe and explain how the social world is constituted by participants (ibid:16). Interviews offer access to 'moral' realities by which participants represent their position in the social world (ibid). They are best seen as 'displays' by participants of these moral realities (ibid:171-3).

The first three points in such a programme define a methodology which adds up to what has been called 'analytic induction' (Robinson, 1951; Mitchell, 1983), a method which approximates

to the experimental method of the natural sciences, the details of which will be laid out in the next section. The fourth point derives from a particular assessment of the nature of accounts, and creates some problems in the context of the present study.

Two principal methods of gathering data are proposed in Silverman's structuralist methodology; firstly observation, participant or otherwise, secondly the use of 'interview' techniques to elicit information about the field. On this latter point, despite referring to Douglas's (1975) study of the Lele pangolin cult, Silverman does not specifically refer to the use of informants in ethnographic study, giving the impression that somehow the researcher will 'know' much about what is going on in the field setting at what might be called the instrumental level. Anthropologists studying other cultures have needed to use native informants, especially where there is a language barrier, not only to gain insight into the rules of classification of things and people used by the subject group (the 'moral ordering of reality'), but also to provide information about political and economic arrangements, geography and transport as well as other details of the setting valuable to the researcher concerning food, supplies and accommodation. Barley (1983) offers a personal account of the necessity of informants in such settings, simply to enable the ethnographer to gain physical access to the phenomena s/he wishes to study. How did Douglas 'know' that the Lele have beneficial relations of exchange with other tribes - the social structural 'arrangement' which Silverman (1985:13-15, 78-9) suggests is the condition of the cultural forms surrounding the pangolin cult? The answer is: as a consequence of information derived from her contacts in the field (Douglas 1975).

Yet Silverman argues that informants only provide 'displays of moral adequacy' which 'provide access to how people account for both their troubles and good fortune .... only by following misleading correspondence theories of truth could it ever have

occurred to researchers to treat interview statements as accurate or distorted reports of reality' (ibid:176). This rejection of positivism goes even further than Hammersley and Atkinson's suggestion that participant knowledge may be treated as both resource and topic (1983:107).

Possibly in own-culture studies the researcher may be assumed to 'know' most of these background details - that we live in a capitalist society, that society is organised about certain kin systems etc. In the case of a technical field in own-culture study, such as the present case of surgery, some of this background is not so immediately 'known', and informants are able to provide not only moral displays, but also a wealth of useful information about the technology and procedures conducted in the field setting. If all information so gathered is merely a 'display' of moral rule, then the researcher would have to depend entirely upon her/his (imperfect) technical grasp of the setting. Alternatively s/he might have recourse to technical texts, but surely these too, having been written by technical participants are equally only legitimate as moral displays, following this logic?

Of course, it may be argued that all objects, for instance an anaesthetic trolley or a scalpel, have not only an instrumental but also a symbolic use, and to merely accept the description of their use as a given, based on information provided (without moral connotation) by informants with knowledge about the technical aspects of surgery, is to go native, and not to fully accept the need to make strange that which is partially culturally familiar. This is the path down which ethnomethodology has led, to a situation where all that can be studied is the techniques participant members use to make sense of the world, the world itself always remaining elusive. It is also a limitation of Silverman's analysis when it comes to studying unfamiliar settings. One must also question the precise provenance of background 'knowledge' which in own-

culture studies seems to be readily available to the researcher. How does s/he 'know' her/his society is capitalist, except through accounts?

For these reasons the present study has been unable to adopt such a uni-dimensional approach to informants' accounts, and it is potentially a legitimate criticism of method that while seeking to sift out the elements of these accounts with a 'moral' component, a positivistic approach to the technical detail of informants' accounts has been adopted as necessary in the interest of saying anything at all about the structural significance of surgery, as opposed to limiting the study to reporting interaction in the particular setting of surgery. The technical apparatus and procedures of surgery are not merely adjuncts to a particular, unique, interaction; they are essentials to its achievement (unlike the lesson, which is aided by the classroom setting, but may be achieved elsewhere), and a grasp of these technicalities is thus essential background knowledge. It would be possible to report surgery entirely in statements such as 'anaesthetists believe that different anaesthetic gases have different side-effects', and pose as a research problem, following Gilbert and Mulkay (1983) the elucidation of resources which anaesthetists draw on in order to make such classifications. On the other hand, in attempting to relate the everyday activities in the operating theatre to the macro question of whither surgical power? such topics have been bracketed. Yet the problem remains when treating informants' accounts, what is 'purely technical', what is moral judgement? Who is to say what is 'purely technical', what is judgemental?

Methodologically, the solution to this problem of how to see informants' accounts may lie in the suggestion by Wallis and Bruce (1983) that accounts may be seen as hypotheses which actors make to explain the world. The ethnographer adopts these first-order hypotheses, some of which relate to matters

technical, others to the moral reality of the informant, and in a Shutzian fashion derives second-order concepts (Shutz, 1962:48) about the field setting. By analysing informants' hypotheses in context, the sociologist is able to grasp both the technical nature of the field, and how actors in that setting use available resources to construct their moral realities. Both technical and moral hypotheses are still to be seen as displays, but in terms of methodology are bracketed into different spheres, with differing relations to the social. For example, the knowledge gleaned from an anaesthetist informant about the different types of anaesthetic agents employed is bracketed into the technical sphere, and while recognising that there may be a social component to her/his classification, it is permitted to stand relatively unexamined, as part of the corpus of technical knowledge which constitutes the discipline of anaesthetics, while the ethnographer focuses upon, say, anaesthetists' judgements about how to employ these anaesthetic agents in different surgical cases.

However, following the structuralist position, these technical 'facts' are not bracketed as in any sense 'a-social', as the postivist would claim, but as socially constructed as any other part of the knowledge which constitutes the field setting. They thus remain a potential topic for investigation, as well as a resource by which the participants' moral realities can be contextualised. To take an example from the present study, one which constitutes Chapter 4, a consideration of the historical context of sterile techniques used in the operating theatre; this 'purely technical' aspect of surgery, having been used by the researcher as 'facts' to make sense of the complexities of procedure in the theatre, are then re-examined as socially constructed categories to detect their significance at a cultural level. That which was resource has become topic.

Analytic induction

A criticism that has been levelled against qualitative methods concerns the validity which may be claimed for analyses based on such methodology. Even where research is limited to description or documentation, the influence of the researcher her/himself must interpose between data and report, in terms of the meaning which is placed on data. The claim that visual records (film, video) which are now being more widely used in ethnography resolve this difficulty would be disputed by visual anthropologists and others (Blacking, 1982; Hammersley and Atkinson, 1983:156-61) who recognise the new forms of imposition - where to point the camera, when to record, how to edit? The consequences for validity of adopting a non-positivist approach to social data has been widely discussed (Cain and Finch, 1981; Denzin, 1970; Douglas, 1970; Holy and Stuchlik, 1983; Nagel, 1963; Shutz, 1962 among many others), and the previous section of this chapter also bears upon this debate. Wallis and Bruce's position (1983) is grounded in the Shutzian view of the development of social theory in relation to the common-sensical notions of participants, which also relates to the objective of grounding theory in ethnographic data. However, their argument, that the beliefs of actors are hypotheses, as are those of the social researcher, is not limiting, it does not prevent interest in the conditions within which social action occurs, Indeed:

> No-one will adequately explain social action who does not understand how individuals interpret their world. But no-one will understand how individuals interpret their world who is not aware of the social and historical context within which they do it. (Wallis and Bruce, 1983:109)

Two points of method may be derived from such a position. Firstly, that the ethnographer should seek to ground her/his theory within the data collected in the field, such that the terms of reference of the researcher may to as great an extent as possible coincide with the meanings of the participants. This position has been developed by Glaser and Strauss (1967, 1971), and will not be rehearsed here.

Secondly, that just as in the natural sciences, and particularly with quantitative data, according to a falsificationist approach to a research programme (Lakatos, 1970), the researcher draws hypotheses from her/his data by a process of induction, and then seeks to test that hypothesis against fresh data, in the long term refining the hypothesis and enabling its generalisation so that eventually it will withstand virtually all attempts to find data which will falsify it; this is not only a similar process to that which social actors use, (albeit un-rigorously), but one which may be used rigorously by the qualitative researcher.

Such an approach has indeed been used in social science, and forms the basis of the case study method, or more specifically 'analytic induction'. This methodology has been discussed by Robinson (1951), Lindesmith (1952), Denzin (1970) and more recently Mitchell (1983), the text of which Silverman draws upon in promoting such a methodology (1985:111-14). The principle behind analytic induction (henceforth AI) is the formulation of generalisations from data, which are then tested against fresh data to progressively develop more rigorous and universal rules. Case studies are progressively used, as equivalents to experiments in the natural sciences, to subject hypotheses to new situations, with the object of falsification, and the ultimate ambition of generality. The objective is a rigorously tested proposition which formally states rules governing an aspect of social reality, and which may be tested against that reality.

At one level this is only what informally shapes a piece of documentation - in Mitchell's description, the 'apt illustration' (Mitchell, 1983:193), which by its claim to be 'typical' of a range of data gathered is reported to demonstrate some simple rule of social organisation. An example from the present study might be an observation of how a scrub nurse passes instruments to a surgeon - an apt illustration sums up the rule of order governing this procedure. The method of AI is demonstrated at a more complex level in terms of a 'social situation' - in Mitchell's words 'a collocation of events which the observer is able to construe as connected with one another and which take place over a relatively restricted time span' (ibid). The case demonstrates a rule of organisation in a particular context. Examples of ascending orders of complexity would be the social situation of an entire operation, an entire day-long list of operations, or the situation of day surgery. The highly complex 'extended case study' is a description and analysis of a sequence of events perhaps over a long period of time, or a wide spatial diversity, and might be the entire study of surgical order reported in this work. There is thus a continuum of complexity of cases which may be drawn upon to test hypotheses.

Mitchell follows Eckstein's (1975) classification of case studies which he suggests demonstrates how they may be used theoretically. The five categories he lists are:
1. Configurative-idiographic studies, which provide insights but no direct theoretical interpretations about the relationship between data elements.
2. Disciplined-configurative studies, which are regarded as not unique or idiographic, from which generalisations may be made about the order. This is the deductive phase by which data patterns are formulated in terms of theoretical postulates. Cases may be used to pose puzzles for theory, to develop new candidate theories, or to put theory to work. The objective at this stage is to state theory precisely and rigorously, so as

to rule out other interpretations of the case.
3. Heuristic case studies, which are deliberately chosen to stimulate theory building, and test potential inter-relations between data elements.
4. Plausibility probes, which are cases selected as preliminary tests of theoretical formulations, without the cost and expense in time of a formal test of theory.[3]
5. Crucial case studies, which like the crucial experiment in natural science offer the circumstances by which a theoretical proposition may be falsified or supported. Selection will depend on a full understanding of the field and the significance of the case for the theory which has been developed.

These five phases of use of cases in a study approximate to the research programme of natural science, in which a series of experiments first generate theory and then test it, refining and rejecting until a theoretical framework has been developed which enables generalisation into formal theory. While the very early stages of case study may derive from an unfocused ethnographic approach, in which data is permitted to ground some theoretical postulates, Mitchell argues that there is an important criterion if the later phases of case study are to be used analytically: that cases are selected and studied within an appropriate theoretical framework. The understanding of the rich detail of the case in the light of this framework enables 'those illuminating insights which make formerly opaque connections suddenly pellucid' (Mitchell, 1983:207).

Adopting a fully-fledged case study approach therefore has consequences for the 'shape' of a piece of research, and also for its length and breadth of study. A preliminary ethnography would lead to reflection and analysis, and a further immersion in the field, selecting cases and constantly attempting to refine theory and make sense of more and more data.

In some senses doctoral research is suited to such an approach, so long as the research question may be delimited suitably. The potential within a qualitative analysis, which does not depend on rigid pre-determined protocols, and a flexibility of fieldwork, documentation and analysis can lend itself to such a methodology. Conversely, the restrictions on time, resources and research report make the project daunting. The investigation of a relatively un-analysed field, as in the case of surgery, also means that few theoretical postulates exist prior to the commencement of fieldwork - an extended ethnographic period is necessitated before the true case-study approach as defined by Mitchell above may be pursued.

For these reasons, while the case study methodology was adopted before entry into the field, the prospect of arriving at formal theory within the limits of the research was not great. Fortunately, the research question was swiftly refined once ethnographic fieldwork began, to concern itself with the social status of the patient in her/his passage through surgery and the import of the techniques and organisation of the specialty in managing this status. Consequently, the bare bones of a theoretical framework was developed within the early months of fieldwork, and the rigorous selection of cases could be initiated.

The methodological shape of the study

The subsequent chapters of this report are intended as far as possible to reproduce the development of the theoretical propositions during the research. There are problems associated with such an attempt - it means that chapters sometimes are unable to fully explore some interesting detail, consideration is delayed to a later section. However, in adopting a case study approach, the source of validity of the analysis rests within the cogency of the theoretical reasoning (Mitchell,

1983:207) and this is demonstrated most elegantly and economically in adopting a developmental description.[4]

From a methodological point of view, Chapter 3 is therefore primarily a pure descriptive ethnography of the operating theatre area, in which the patterning of elements in time and space are studied. Towards the end of this chapter, a theory grounded in this data is set out in an, as yet, unelaborated form.

Chapters 4 and 5 are two major case studies which built upon the data in Chapter 3, identifying two principal characteristics of surgery. The first of these studies assesses surgical sterility in terms of its history, the second considers the relationship between surgeons and anaesthetists. Both are used to refine and develop the theoretical analysis.

The first part of this study concludes with a short summary of the findings and their bearing upon the hypotheses set out in the first chapter. Chapter 7 begins the second part of the study, with material drawn from a cross-cultural perspective. This enables elaboration of a theoretical framework in which the data in the preceding chapters may be embedded and a set of propositions which may be tested against selected cases.

Chapter 8 uses three case studies: the interaction of surgeons with patients pre- and post-operatively, the management of surgery, and finally, day case surgery, to probe the plausibility of the theoretical framework, and to attempt a crucial case study. The success of the crucial study is evaluated in the concluding chapter.

CHAPTER 3: THE CIRCUITS OF HYGIENE

Introduction

The first part of this chapter documents background ethnographic data gathered at General Hospital during the period of field research. It focuses upon three topics. The first concerns the personnel to be found in and around the site of surgery, the operating theatre. This data was collected by observation and from key informants Dr B and Nurses F and B. The second involves a detailed description of the physical layout of the operating theatre suites (henceforth abbreviated as OT) at General Hospital. Goffman (1959, 1961) has described the importance of physical space in the shaping of interaction, and his notions of front- and back-space are indeed appropriate to the following description and analysis. Giddens (1985) has suggested that space must be understood as affecting agency, to the extent that packing of bodies is physically limiting. This theme has also been examined by Turner (1986). Rawlings (1985) considered communication problems in the Central Sterile Service Unit of a large hospital as a result of architectural layout. Rosengren and Devault (1963) considered space in an obstetric unit. The data in this section is drawn principally from field observations.

However, boundaries and barriers need not be physical, and the third topic documents an important organising and delimiting influence upon movements: the sterile procedures conducted in and around the OT. This draws both upon the researcher's own observational data, and upon the large body of interview material gathered from the range of personnel using the OT. In addition some information was obtained from interviews with an anaesthetist and an infection control nurse based at a nearby

general hospital, Meadway. The data compares well with that gathered by Katz (1984) in a North American OT.

Towards the end of this section some observed anomalies, concerned principally with the use of surgical masks, are identified. It is suggested that these discontinuities in sterile practices require attention, as they point up a symbolic significance to sterile practices in addition to their practical instrumentality. This theme is important to the thesis, and is enlarged in Chapter 4, which looks at the historical development of these practices.

The physical layout, and the rules of sterile procedure constitute a patterning of permissible movements of staff, patients and equipment, and in the second part of this chapter analysis of these movements in space suggest they are an important constituent of the process whereby the status of a patient is altered during surgery. These movements are designated 'circuits of hygiene', acknowledging the emic root of 'hygiene' as a system of rules for promoting health (OED s.v. 'hygiene'). The circuits for staff, equipment, and most importantly, patients are investigated in detail as a first step in developing an analysis of the social role of surgery as a manipulator of status. The stages of the physical resection of a lesion which a patient undergoes during surgery are thus embedded in a theoretical framework, and the ethnography of the operation itself is provided with an organising principle.

A. Operating theatre personnel

In almost all cases observed at General Hospital, elective surgery is conducted by a consultant surgeon. Occasionally, a senior registrar in surgery will be the most senior surgeon present, who will have access to a consultant for advice. In the case of the orthopaedic lists observed, a consultant surgeon operated in one theatre, while in the twin theatre Mr

K[1] (a senior surgeon with non-consultant status) was able to call on the consultant before commencing certain procedures.

The senior surgeon is assisted by a more junior doctor, who will usually stand facing the former across the patient. Hence there is a large degree of hands-on teaching done by inexperienced registrars, and house doctors, by which means they obtain experience of operative techniques. Almost all surgeons in theatre senior to house doctors will be pursuing a specifically surgical career. The techniques which a surgeon will be able to perform are very slowly acquired during the junior (non-consultant) years.

> In a gynaecology theatre, a registrar was being supervised on her first hysterectomy. Although she had previously assisted at many such operations, she was extremely nervous, and was tentative in her cutting. The consequence appeared bizarre to the researcher in that she used the tip of a scalpel to gently incise the uterus as if to mark out a dotted line she could then follow, while asking the consultant if this was the correct line to cut along. When assured that it was correct, she completed the resection. (Field notes 14/2/5/2)

The patient is anaesthetised by a consultant or senior registrar anaesthetist, and is monitored throughout the operation by this doctor, or by a junior anaesthetist who will call the consultant if any change occurs. Ambulance personnel on training courses in anaesthesia will sometimes assist a consultant anaesthetist, and on occasions it was observed that such a person was left to monitor a patient under general anaesthetic for short periods when the anaesthetist was not in the operating theatre. (Field Notes 5/2/7/5; 17/2/7/4)

The theatre sister has immediate responsibility for an OT. S/he is responsible for safety, availability of equipment, stocks of

drugs and instruments, for ensuring rules of sterility are not broken. Guests in theatre, including the researcher, would often be quizzed about their identity by sister.

> The researcher and another guest were asked who they were. Having explained, and said he had been given permission to observe by Mr C (neurosurgeon) and Dr A (anaesthetist), the researcher was told that he should also have told her that he was coming into theatre. 'I need to know who is here.' Sister A subsequently told the researcher where to stand, and supplied him with background material in the form of a leaflet about a cerebro-spinal fluid (CSF) reservoir which had been used in one of the operations that day.(Field notes 16/3/7/1)

A twin theatre suite is staffed with seven trained nursing staff. In each theatre there will be one scrub nurse, one circulating nurse, and an anaesthetic nurse (usually an SEN rather than SRN.) The seventh nurse will control the flow of lists in the OT. (Interview with Nurse F 6/3/7/2)

> Operating Department Manager Nurse F: 'More often there will be six, or sometimes five. We are not happy when there are only five because that relies on two students and occasionally a post-basic nurse on a theatre course.' (Interview 6/3/7/2)

The anaesthetic nurse, who also helps prepare patients, positioning them and, for example, putting on tourniquets (Field Notes 17/3/7/1), has taken over many duties previously carried out by an Operating Department Assistant

> 'There are only two ODAs left at [ ] Hospital. There is not the money available to pay overtime so the jobs are not filled. They are being replaced by anaesthetic nurses.' - John, ODA, thoracic OT. (Field notes 23/2/7/1)

Occasional visitors to an OT are medical students from the university medical school. They will be either attached to a surgical firm, or doing a 'rotation' in anaesthetics.

B. Operating Theatre Suite Layout

At General Hospital surgery is carried out in ten operating theatres[2], which are organised into five twin suites. While there are some differences between suite layout, some features are in common. The two twin general theatre suites, and the twin suite known at the time of field work as Thoracic Theatres, and now being used in addition for Day Case Surgery, all conform to a similar layout.[3] Figure 3.1, the diagram of one General OT therefore provides a layout for six of the ten theatres at General. Figure 3.2 shows the layout of Plastic Theatres, and Figure 3.3 the layout of Neurosurgery Theatres.

OTs are organised around a central core area, known as the sterile corridor (SC). The entrance(s) to the SC are clearly marked as off-limits to patients, visitors, and staff not authorised to enter, and form the principal barrier and boundary to the OT. Within this barrier a second set of doors marks the boundary beyond which sterile conditions are supposed to apply, and within which precautions are taken to reduce the numbers of infective organisms present. Because floors are disinfected, all personnel passing through the inner doors must first put on plastic overshoes which are available in a box between the two sets of doors. (Portering staff are exempted from this rule - see section C.) However, the institution of the sterile corridor has an important secondary effect:

> 'Infection will be used as the excuse for all the expense, but these precautions are also very effective in keeping people out of theatre.' (Interview with Infection Control Nurse 18/6/7/2)

Fig. 3.1: Floor plan of General surgery theatre

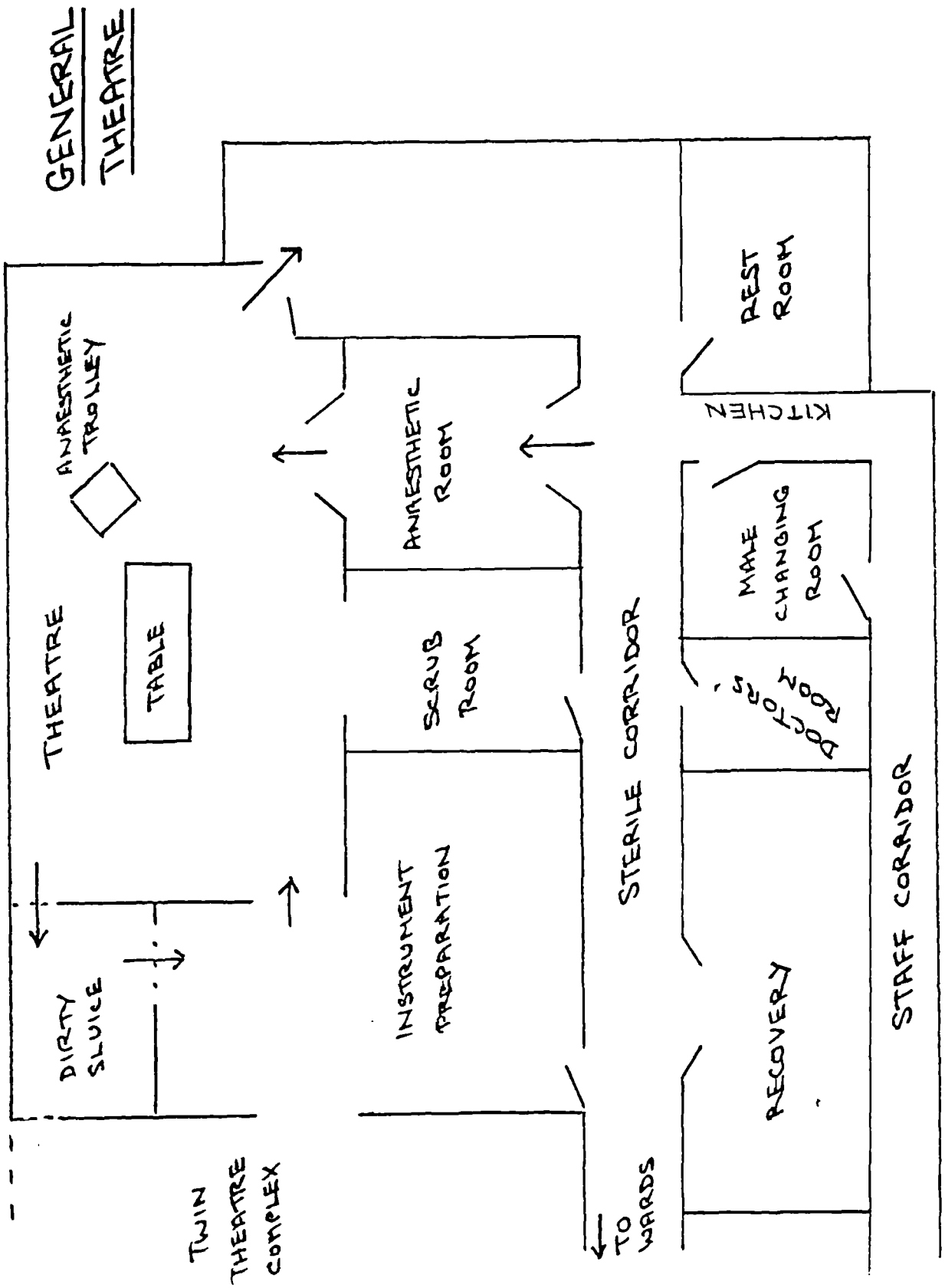


Fig. 3.2: Floor plan of Plastic surgery theatres

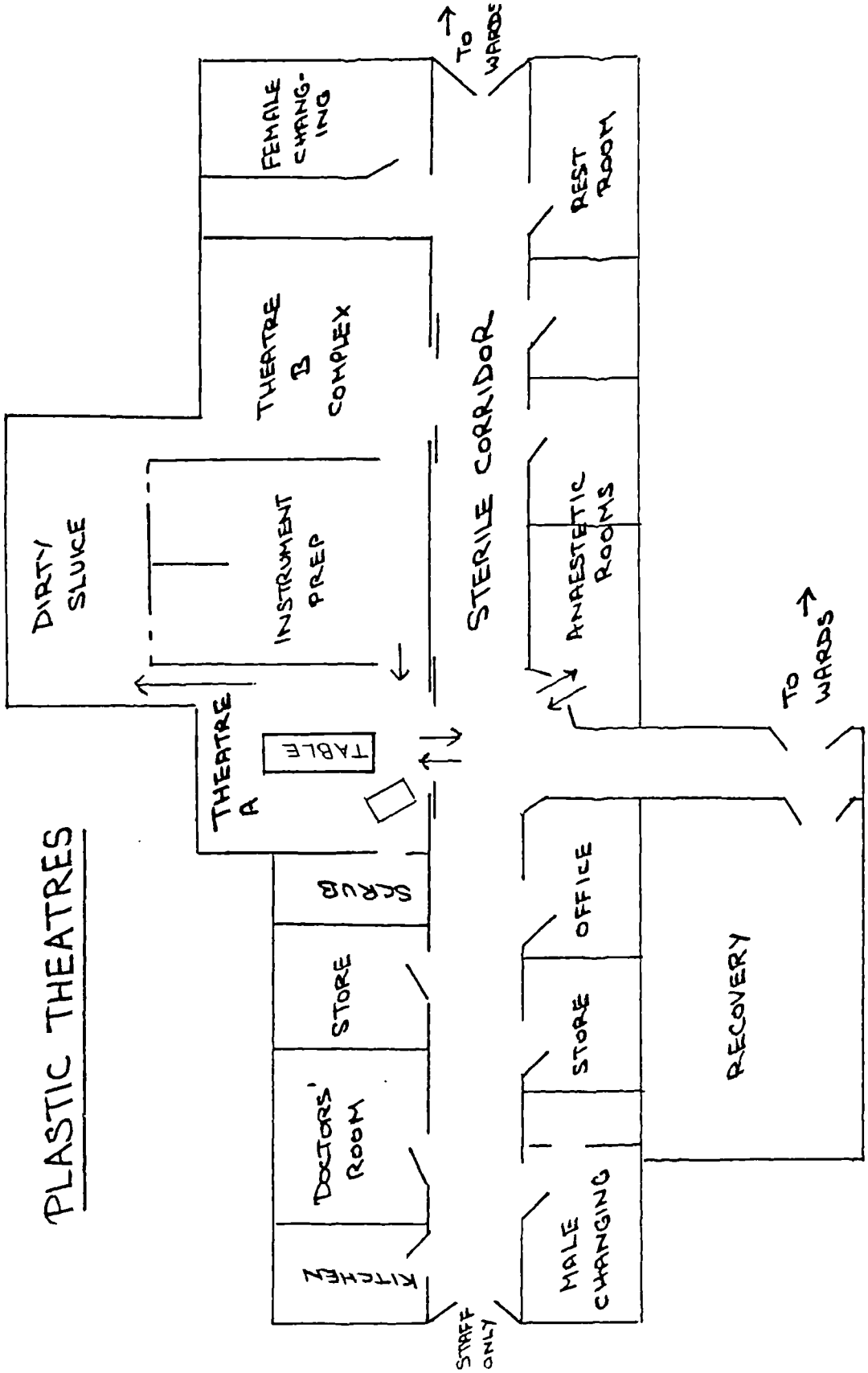
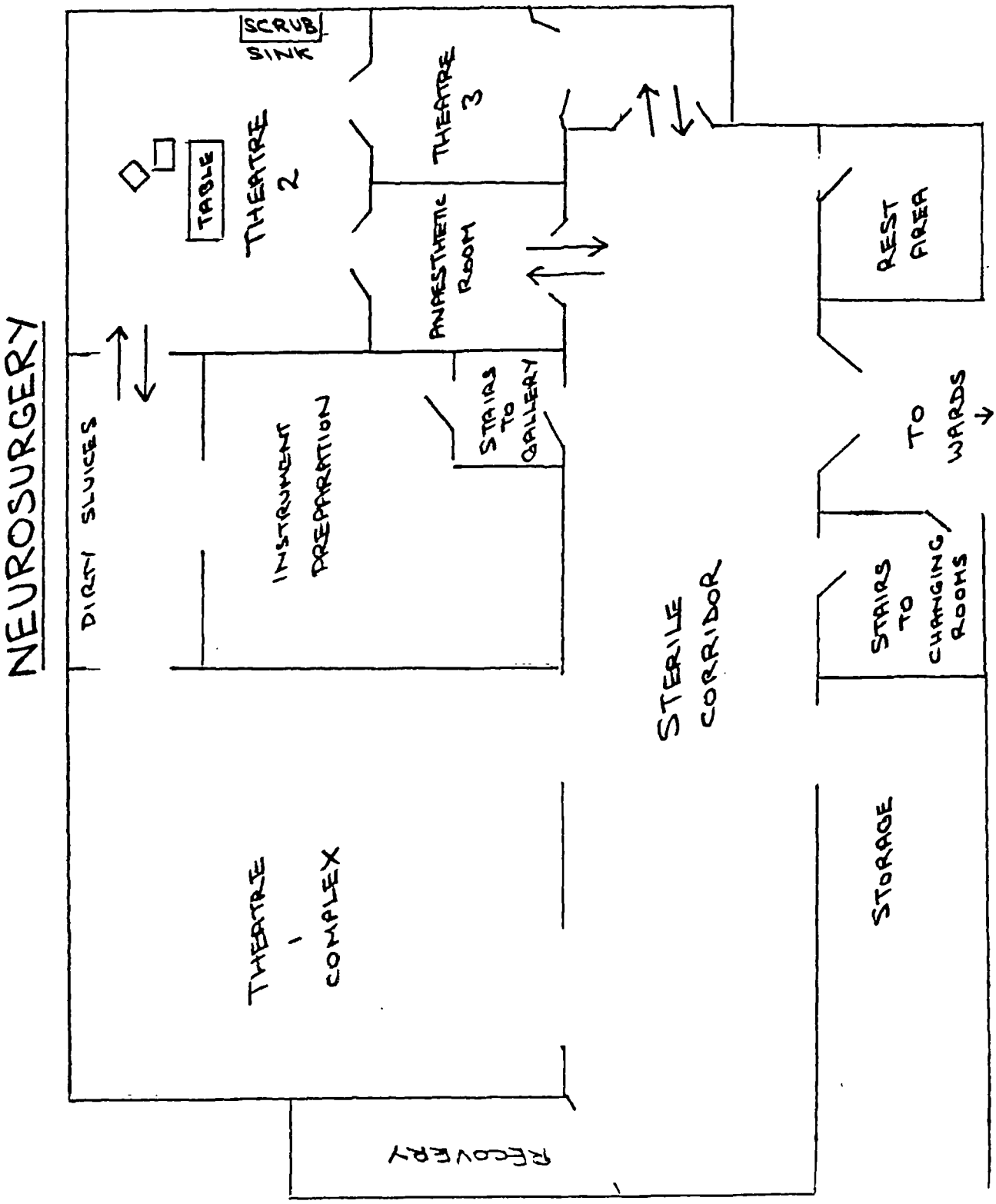


Fig. 3.3: Floor plan of Neuro-surgery theatres



Almost all surgical personnel use a different route of access to the OT. Either within the first set of doors, or via a discretely marked staff entrance, access is obtained to a staff corridor, which leads to changing rooms. Changing rooms contain washing and toilet facilities, and stocks of sterile clothing. Suitably garbed, personnel are able to enter the sterile corridor via an internal door from the changing rooms.

Each theatre within the twin suite possesses its own anaesthetic room and scrub areas, but shares instrument preparation and instrument sterilisation facilities. These latter spaces are situated between the two theatres of a suite, and provide a means of access between theatres without passing through the sterile corridor. This area, consisting of theatres and instrument preparation areas, along with scrub areas, form an inner sanctum within the OT, to which access is limited to specific personnel (see section C).

The other areas comprise a recovery room for post-operative patients, and areas for use by staff - offices for doctors and the theatre sister, a rest room, and equipment stock rooms. The OT is thus virtually autonomous of the hospital, and in some OTs such as neurosurgery where all-day lists are conducted, arrangements are made to provide snack luncheon for staff obviating the need to leave the OT between 9 a.m. and late afternoon. Telephones situated in the sterile corridor and in the offices, and the bleep system enable contact with the outside world to be maintained. Informants told the researcher that one of the pleasures of working in surgery was the inaccessibility.

Within the operating theatre, the operating table is centrally placed. A movable anaesthetics trolley is situated to one end, and is connected to various pipes providing oxygen and other gases. The orientation of the patient is therefore limited by the need for anaesthetic access. Above the table is an

adjustable light; another lighting rig is available, for example when an operation is multi-sited, when not in use this is removed from the theatre, to be stored in the sterile corridor, as is other bulky equipment. Other equipment is ranged around the table as needed. An important implement is the diathermy, which is used in almost all operations to stop bleeding, and sometimes to resect, as in prostatectomy. Despite being essential, in two theatres at General, this electrically operated equipment has a mains lead which is so short that a dangerous hazard is created by the tightly stretched cable. This further limits flow of personnel around the operation, especially in the smaller theatres. (Field Notes 24/2/7/4; 17/3/7/1)

The sluice area is accessible from theatre either via a hatchway through which trolleys of instruments can be passed, or a corridor. Instruments are cleaned and sterilised in this area, which is separated from an instrument preparation area normally by a hatchway. Scrub areas contain washing facilities and stocks of sterile gowns, gloves and masks for surgeons' and scrub nurses' usage. They are accessed either from the theatre itself (plastic, one general OT), directly from the SC (other general OTs), or are part of the theatre area (neurosurgery).

There is considerable variation in the layout of OTs at General, although the relationship between areas is broadly equivalent. However, both neurosurgical and plastic theatres possess features of architecture which do not conform to the predominant theatre design. These anomalies are considered in the latter section of this chapter, and in Chapter 5.

C. Sterile Procedures in Surgery

A large proportion of the rules of the OT are concerned with sterility - that is the prevention of ingress by infective agencies into certain areas whereby infection of surgical wounds, or cross-contamination between patients might result. The more obvious aspects of sterile procedure, for instance the wearing of sterile clothing is complemented by more subtle procedures concerned with the movement of persons and objects within the OT. Hence, many of the aspects of OT layout reflect the requirements of sterile procedure. For this reason the concept of a 'circuit of hygiene' has been invoked to describe the permissible passages of staff, patients and equipment through the OT. These circuits are explored below.

All personnel who enter the operating theatre wear a mask, clogs or boots, and a J-cloth cap - or for some surgeons, a hood. Male personnel wear a linen shirt and trousers (greens), while female theatre personnel wear a white dress. This gender difference in garb leads to some status problems; because female doctors have to change in the women's changing room, in most OTs they have access only to a uniform which is traditionally equated with (lower status) nursing staff. In the neurosurgery OT however, the sterile clothing stocks are held in a cupboard between the separate male and female changing rooms.

> Two female anaesthetics registrars who were assisting Dr A came to neurosurgery theatre dressed in 'greens', the pyjama tops and trousers worn by male doctors at General, but by all clinical staff at some other hospitals. However, a female guest, a young researcher, was given a white dress to wear while visiting the OT, and was hence equated with nursing as opposed to clinical staff. (Field notes 16/3/7/2)

Surgeons, assistants, and a scrub nurse, that is, all personnel who will have contact with the 'sterile field' - the area of wound and surrounding towels - wear a sterile gown, gloves, and scrub their hands and forearms prior to an operation. The scrub is a highly ritualized procedure, conducted in an area normally separated from the operating room, although in neurosurgical OT it consists merely of a scrub sink in one corner of the theatre. The person scrubbing spends an allotted period washing the hands and forearms in antiseptic soap and scrubbing the nail-bed. The hands are then dried. A sterile gown is then taken from a shelf, and put on. This requires the assistance of another person, usually a nurse or visitor, who will tie the gown at the back. Sterile gloves are then removed from a pack and put on. This has to be done without touching the outside of the glove with the hand, although the hand has been scrubbed. The researcher on one occasion had been invited to scrub, and found this procedure very difficult, to the amusement of the nurse who was demonstrating the techniques and helping to ensure sterility was attained by the neophyte. The co-operative effort involving in sterile garbing creates solidarity among personnel in the preparation for operating.

> Part of the research bargain came to be the use of the researcher to assist sterile personnel tying and untying gowns, moving non-sterile equipment, and carrying the fibre-optic cord attached to one surgeon's head-lamp, in procession around the theatre. The researcher was used to make up for shortage of nursing support needed to protect sterility. (Field Notes 10/2/5/3; 16/2/7/3; 17/2/7/1)

The limits of this co-operation are defined by tradition:

> Surgeon Mr T: 'There was a time when you could demand a particular instrument. Now you take what you are given.' (Field notes 19/2/7/2)

and by status:

> A junior (non-consultant) surgeon was operating in plastic theatre. He asked for some service or other from a nurse. She performed this adding in a sarcastic tone of voice 'Would sir like me to mop his sweating brow?' (Field Notes 19/2/7/1)

Once the surgeon or scrub nurse is garbed in sterile gown and gloves, s/he must not touch anything unsterile, including mask or cap. So these have to be in place before scrubbing, and must remain untouched throughout the operation. Some surgeons change masks between operations, others wear the same mask throughout a list. Masking is an area of sterile procedure where surprisingly there does not appear to be any ubiquitous rules of method. This topic is considered further below and will constitute an important theme in this work.

The scrub nurse and assisting surgeon prepare the anaesthetised patient. The wound area is disinfected with an iodine paint. In some surgery a sterile plastic skin is now stuck over the wound area to prevent possibility of bacteria from the skin adjacent to the wound entering the incision. Towels are spread over the patient, leaving a small rectangular area for operating within. When the head is not involved, it, and the anaesthetic equipment is separated from the operating site by a curtain of sterile towelling. In neuro-surgery, the face of the patient is covered as is the rest of her/his body with towelling, leaving only the cranium exposed.

The towelling forms a sterile barrier. Below the towel is an un-sterile area, which is accessible only to non-sterile personnel.

> A monitoring device attached to the hand of a patient undergoing major vascular surgery had become inoperative.

> The anaesthetist had to burrow under the towelling to re-attach the device, and then asked the assisting surgeon not to lean against the towelling covering the patient's arm. (Field notes 17/2/7/4)

Any piece of equipment which is to be above the operation, for example an X-ray gun in orthopaedic surgery, or a microscope for plastic surgery, is covered either with towels or in sterile plastic sheeting.

Instruments are brought from the instrument preparation room laid out on towel-covered trolleys. These are positioned such that they can be accessed by the scrub nurse, often on gantries over the recumbent patient. Unscrubbed nurses will open packages containing sterile contents such as disposable syringes, swabs and any prosthetic devices to be used. The outside of these packages are non-sterile, so they are designed so that the sterile contents will drop out on to the sterile surface, where they can be accessed by the scrub nurse.

The scrub nurse passes sterile instruments to the surgeon with the right hand, and takes them from him/her with the left. No other personnel may come into contact with sterile instruments or towels, or sterile personnel.

> An extra pair of hands was required during an operation to gain satisfactory wound access in a plump patient. This task required considerable strength, so because of his gender, and a shortage of nursing staff, the researcher was asked to assist by holding the skin retractor. However, because he was not scrubbed, he could not touch the retractor. So a piece of sterile bandage was tied to the eyelet of the retractor (which is shaped like a pair of scissors) and the researcher was given the other end to pull. (Field notes 10/2/5/1)

Some instruments will be used more than once during an operation, but any instruments which are deemed to have lost their sterility, by contact with the skin, or with gastro-intestinal contents, will be discarded. Discarded instruments are removed by unscrubbed personnel. The circuit of hygiene associated with instruments is considered further below.

In the anaesthetic room masks are not worn, nor does the anaesthetic personnel wear sterile gowns or gloves. The exception is if a spinal or epidural anaesthetic is to be given, when the anaesthetist will wash (but not scrub) his/her hands, put on sterile gloves, gown and mask. These procedures seem to be considered as sorts of mini-operations carried out by an anaesthetist, and so warrant the ritual of mask and gloves. Other personnel are expected to be masked in the anaesthetic room; normally masks are only worn in theatre.

Masking: a grey area of sterile technique?

Within the OT, masks are worn only in the operating theatre, the instrument preparation room, and as noted above on some occasions in the anaesthetic room. Wearing masks thus marks a boundary around the core area in terms of sterility (see Figure 3.1). However, observations made by the researcher suggest that this boundary is not so clearly, or simply demarcated.

In the anaesthetic room, masks worn by anaesthetist and anaesthetic nurse are normally pulled down, to dangle around the chin. (The 'rest' position, which all unscrubbed theatre personnel will adopt throughout the OT, in the rest room, office, and if called away, elsewhere in the hospital.) The patient having been induced into unconsciousness, before opening the theatre doors to wheel the trolley bearing the patient into theatre, anaesthetist and nurse will first pull up their masks. **Rule 1: An operating theatre containing an untreated patient is an area in which masking is essential.**

This is not so when a patient has been treated; i.e. once an operation is complete and the skin incision is sewn.

> A surgeon Mr M completed an abdominal operation, and having sutured the muscle layer, left his assistant to close the skin. He de-gowned, and having discarded used gloves and masks returned to watch the final stages of the suturing and dressing. (Field Notes 5/2/7/1)

> Anaesthetic nurse J was clearing up after an operation, and prior to the next patient's arrival in theatre, and was talking to the researcher, who was masked. She had her mask dangling below her chin. (Field Notes 17/3/7/2)

So when a theatre does not contain a patient, or the patient has undergone surgery, masking is not necessary. Even when a patient is undergoing surgery, certain personnel may remove their masks.

> The researcher asked Dr A, the anaesthetist in neuro-surgical OT, if he always had assistance. He said that often he did not, and he would bring his coffee into theatre. (Field notes 24/2/7/3)

> An ambulance-man trainee went for a coffee break during an operation. He brought Dr B (anaesthetist) and the researcher cups of coffee in theatre. Dr B said to the researcher: 'You had better take yours outside. It is only consultants who are allowed to drink their coffee here. (Field notes 17/2/7/3)

When the mask is in its operational position, it is intended to cover both nose and mouth, and secured above and below with tapes. In this way it is close fitting below the chin, any explosive emission of droplets will be directed sideways away

from the operation wound. (Surgeons are taught not to turn their heads to sneeze - this will have the effect of directing the emission into the wound.)

However, the researcher observed most anaesthetists and many surgeons wearing a mask such as only to cover the mouth. One anaesthetist wore his with only top tapes tied, so that the mask hung loose, with its lower tapes dangling.

> 'There is a battle between bacteriological sterility and workability. You are supposed to wear a mask like this (demonstrates), but many wear it like this (under the nose) claiming that their spectacles are misted up if they wear it over the nose.' (Dr M, obstetric anaesthetist and operating department manager. Field Notes 21/5/7/1)

The wearing of masks is conventional. At ( ) Hospital, masks are no longer worn during delivery.

> 'Childbirth is natural, so there was pressure to make it so - and that means not wearing surgical masks. Access to theatre is limited to people who are properly dressed, but we found that new mothers in recovery were neglected as a result, so we made access to recovery rooms open.' (Interview with Dr M. Field Notes 21/5/7/2)

Rule 2: Where masks are conventionally worn, the degree of compliance is related inversely to the status of the wearer. Nurses speak of surgeons as seeing themselves as 'above infection.' An infection control nurse commented 'You very seldom find both surgeon and anaesthetist with masks adjusted properly.' (Nurse B Field Notes 18/6/7/1) Student nurses, on the other hand look as if they practice in front of the mirror, so perfectly straight are their masks. Nurses are taught to wear them whenever in theatre, although attachment to anaesthetists, as noted above, seems to contaminate conventionality.

Dr M: 'Nurses are very conservative and fairly rigid in their outlook. They are by far the best people for maintaining surgical sterility.' (Field Notes 21/5/7/3)

However not all nurses are convinced that masks are effective:

> Theatre Sister: 'These things work for two minutes, and then have no effect. At the Children's Hospital they've stopped wearing them. There's no evidence that they work.'
> Researcher: 'So it's traditional, and symbolic?'
> Theatre Sister: 'Yes. You do what the boss says, so here we do some things which are not done elsewhere.' (Field Notes 12/2/7/1)

The 'boss' - in this case, Nurse Manager F - has a different view: 'Filter masks work better now than they did - the best ones last two to three hours. (Interview with Nurse F, 6/3/7/2)

An infection control nurse, Nurse B, commented that discarding masks might have little effect so long as little speaking occurred around the patient, this having some effect on air movement. (Interview with Nurse B, 18/6/7/2)

So on one hand there is resistance to the abandonment of masks, while often they are worn such that they would not prevent droplet infection from the nose, and little scientific evidence is available to indicate their efficacy. The role of prophylactic antibiotics (given to patients before operations) in protecting patients despite only partial adherence to asepsis, was articulated by theatre sister Nurse G:

> 'Antibiotics are doing the job at the moment. You could do an operation in the middle of a cornfield and be as safe. Here the air conditioning doesn't work. And it's a problem with all the comings and goings. In plastic theatre, you

> can have sales reps in their street clothes standing at the door of the theatre chatting to the surgeon during an operation. There's a hospital in [ ] where they lock the doors and bring the telephone in at the beginning of an operation. You might think that's a lot of trouble, but you'd feel happy having an operation there. In Australia, the antibiotics no longer work.' (Field Notes 12/2/7/2)

The discontinuity between sterile practice and doubts about its efficacy was a theme which remained unresolved during the fieldwork. Informants were unable to provide any rationale for their behaviour. Suggestions from the researcher that personnel liked to wear the mask, that it 'meant more' than being simply a scientifically valid practice met with incredulity and threatened the continuity of the research bargain with informants. The difficulty in broaching this question of the 'meaning' of the mask led to an alternative approach: an investigation of the historical root of these aseptic practices. This investigation, which is set out in Chapter 4, places the sterile practices described above in context.

Contamination

While most sterile practices are intended to protect the patient from the surgical environment (including personnel), from time to time mention was made by informants, usually only in response to specific questioning, of the role of surgical garb as protection against contamination.

> 'Theatre nurses are at risk more than their colleagues on the ward because of the risk of inoculation of body fluids - it's always possible that a patient with HIV or ' hepatitis will come in. Staff need to be convinced that the precautions are as foolproof as we can make them, but there is always a risk.' (Interview with Operating Department Manager Nurse F, 21/5/7/5)

Theatre nurses receive globulin vaccination against serum hepatitis because of the high risk of exposure to body fluids.

> 'With the orderlies and junior nursing staff there is a need for psychological counselling to cope with the risk.' (Nurse F. Field Notes 21/5/7/6)

This suggestion that 'professionalism' entered into acceptance of contamination risks was echoed by a surgeon in plastic theatre, when a patient with many tattoos was being prepared:

> Mr T: Never a month goes by that we don't nick ourselves with a scalpel or other instrument, and I suppose we should be concerned about the risk, but we don't generally do anything.
> Researcher: I suppose the gloves offer some protection?
> Mr T: Yes, once a week I tear a glove, so they may help.
> Researcher; Do you take precautions when you have a patient who might be a risk?
> Mr T: Well, it's only if there is inoculation with blood that it's a problem.
> Researcher: What about blood spray into the eyes?
> Mr T: That can be a danger I suppose. I often wear lenses [binocular magnification attachment], so they have a double use. (Field Notes 19/2/7/2)

When a patient who was having needle marks removed from her arm was being treated, surgeons and scrub nurses wore visors against the spray of blood (the operative technique was to remove the topmost layer of skin with a drill fitted with an abrasive wheel). No other precautions were taken, but Dr J (the anaesthetist) told the researcher (very obliquely) that the patient could be high-risk, and the eye-protecting precautions, while arousing hilarity among the theatre personnel, would have been understood as a warning to take extra care. (Field Notes 19/2/7/3)

Circuits of hygiene

So far in this chapter the organisation of surgery within the OT has been described by reference to architectural spaces and personnel. But in addition, the surgical order has been shown to be largely modulated through certain rules of sterile practice based on the theory of asepsis, the removal of infective agencies from the vicinity of the operation wound. If these are considered as a set of first-order rules, then the significance of the spaces within the OT is in their interaction with these rules to construct second-order rules concerned with the movement of things and bodies. These second-order rules are herewith designated 'circuits of hygiene'. It is suggested that it is these second-level rules which are so important in constituting surgery as a powerful technique of healing in our culture. (An important corollary of this position is that it explains the influence of the architectural layout in creating the meaning of surgery, without suggesting that these spaces are in themselves sufficient to effect social ordering. Of course, the architecture **will** reflect medical theory, in this case presumably asepsis[4], to some extent, and it is only because it does that the analysis of spaces is of any use; but as will be seen, layout does vary, and **is** mutable: so it does not in itself constitute sufficient constraint upon the interactions which occur within it to entirely structure them, nor can those structures be read off from spaces alone. See Prior (1988) for a contrary view.)

Each circuit of hygiene represents an imperative by which the hygiene of surgery is maintained and promoted. The direction of movement is necessary to ensure that successful hygiene ensues. These movements tend to take the form of uni-directional passages, hence the use of the term 'circuit'. 'Hygiene', however, is used here in a double sense. In the narrower sense, hygiene consists of the science of sanitation, cleanliness and sterility. This may be designated hygiene[1].

However, the emic roots of 'hygiene' are wider: 'hygiene' was the knowledge and practice which concerned itself with the promotion and protection of 'health', deriving from Hygeia, goddess of health and daughter of Aesculapius in Greek mythology (OED s.v. 'hygiene'; 'Hygeia'). This is hygiene^2.

This wider notion of hygiene as health is appropriate to the understanding of the procedures conducted in the OT, concerned as they are with the restoration and promotion of health in patients undergoing surgical healing. While the circuits of hygiene pertaining to staff and instruments act to ensure hygiene^1, also they are concerned with hygiene^2: the transition or passage of the patient from her/his unhealthy status prior to healing to a more healthy status as healed. The patient's own circuit of hygiene, her/his movement through the surgical space to perform this status passage, is concerned foremost with hygiene^2.

This chapter examines the three circuits, and develops this model of a status passage. It is tempting to typify this status change as simply from 'Ill' to 'Well', but there would be considerable difficulties associated with such a typification, not the least being the subjective experience of the patient which may be that s/he is 'ill-er' after the operation than before. So too is the apparent contradiction, which however is not necessarily contradictory within the OT, that 'the operation was a success, but the patient died.' A more adequate typification will be suggested below, and in Chapter 7.

One problem with investigating the movements is the variability in layout of OTs at General. The analysis in this chapter will therefore be based upon Theatres N., one of the three 'congruent' OTs (Theatres N, Theatres S and thoracic/day case.) The variability of OT layout is examined in Chapter 5.

Barriers and rules

The diagrams accompanying this chapter indicate the circuits of hygiene observed in Theatres N. Arrows on the diagrams indicate the normal direction in which instruments, staff and patients move. There are no rules in the forms of signs or physical impedimentia to govern which directions are permissible, although of course barriers in the form of architectural construction limit possible movements. While it is an axiom of this analysis that these structures are not arbitrary, and are intended to regulate interaction, it is also an axiom that they are not inviolable.

Yet there clearly appear to be conventions which lay down how staff, patients and instruments may move; it would be considered extremely unusual (and probably dangerous) were a patient or an instrument to move in an unconventional direction. The arbitrariness of some conventions pertaining to staff is more obvious. For example, there appears to be nothing preventing the scrub room being used as a thoroughfare, but it is conventional that surgeons do not use the anaesthetic room as a thoroughfare. Conventions can also be altered:

> 'At G (a new private hospital), when commissioned, a red line on the floor demarcated sterile areas in the OT. However, the inclusion of the coffee-room within this boundary prevented surgeons colleagues dropping by for coffee, thus disrupting a convention of hospital sociability. The red line was quickly re-painted to exclude the coffee room from the sterile area.' (Interview with Mr P. Field notes 4/1/8/1)

The physical movements which constitute the circuits of hygiene are of course accompanied by particular activities: the legitimacy of an activity may indeed depend upon where or by whom it is carried out. As noted in Chapter 3, drinking coffee

is illegitimate in theatre, unless the imbiber is a consultant. To separate the different circuits is thus somewhat un-natural, and overlap obviously occurs. Because the principal interest here is with the impact of the circuits upon the patient, and with the phases of resection undergone by the patient, the bulk of the following ethnographic section will be devoted to the patient's passage through the OT. Firstly, however, the circuits pertaining to staff and instruments will be described, where their interaction with the patient is not covered in the main section.

The Staff Circuit

Personnel working in the OT (surgeons, anaesthetists, theatre and anaesthetic nurses, operating department assistants (ODAs), students and auxiliaries enter the suite along the staff corridor, the entrance to which is outside the inner doors to the sterile corridor (SC).

From the staff corridor they can enter the men's and women's changing rooms, which are equipped with lavatory, washing facilities and shower, and in which are supplies of sterile clothing, shoes, masks and caps. Personnel are then able to enter the sterile area, which includes rest rooms, office, stores and telephone in addition to theatres and associated facilities. The kitchen is an ambiguous area in which sterile personnel prepare coffee, while access is also possible from the (non-sterile) staff corridor for auxiliaries who perform domestic duties.

Ward nurses enter the OT with patients through the main OT doors, having put on overshoes. Porters are exempt from this rule, but they take patients only to the anaesthetic room, and collect them from the recovery area, they do not enter theatre, and rarely pass through the outer doors of the anaesthetic room. These latter categories of staff do not work in theatre,

and are seen as outsiders. However theatre staff are dependent upon them for providing a flow of patients.

> Surgeons and other staff were ready to start an afternoon list at 2 p.m. A telephone call was made to bring the first patient from the ward. However, it was the ward nurses' lunch break, and a nurse could not be spared to accompany a patient. There was a 20 minute wait until the patient arrived. Dr B said 'This happens every day. The ward sister knows we start at 2 p.m., but always sends the shift to lunch then, so we are always delayed.' (Field Notes 12/2/7/1)

At the completion of their duties, staff pass back through changing rooms into the non-sterile world.

The Instrument Circuit

Some details of the instrument circuit pertaining to sterile procedure have been recorded above. Instruments begin their circuit in the preparation room when they are removed from steam autoclaves. In the autoclave they are sterilised in wire baskets bearing the name of the theatre. For a particular operation there is a designated complement of instruments which will be required, and it is up to the theatre sister to ensure that the correct set are prepared prior to the operation. At Western there is a shortage of instruments, so a list containing a number of similar operations may be delayed while instruments are sterilised between operations.

> A patient with an anal fistula is ready to be operated upon. There is a delay because according to the list the planned procedure was an Investigation under Anaesthetic (IUA), and the surgeon has decided to repair the fistula. The nursing staff complain that they did not know what to prepare for; the surgeons complain as they stand around gowned. The anaesthetist has to connect an ECG to the patient because the anaesthetic is going to last longer than was the case for the relatively minor IUA procedure.

Nursing staff have a responsibility to ensure instruments are of a satisfactory standard. Surgeons can be highly critical:

> Surgeon Mrs V: 'This laparoscopy needle will not work, it doesn't move freely .... give me another.' Scrub nurse passes another. 'No, this one is no good either.' Scrub nurse has to go to preparation room for a third needle. Mrs V: 'We are not going to start badly this morning; are we?' (Field Notes 14/2/5/2)

Instruments are laid out on trays covered with green sterile towels, and other equipment such as bowls of water are

positioned so the scrub nurse can access instruments as required. Scrub nurses are highly knowledgeable about operating technique, and will have a good idea what instruments will be needed as an operation progresses. They also learn a strict etiquette in relation to passing instruments.

> Nurse C: 'X (a certain surgeon) is always reaching over and taking instruments. I slapped him on the hand. I feel like saying "Stop it, that's my domain. But I'll say that I'm learning, and I can't learn if he takes the instruments.'
> Nurse D: 'We're all learning.' (Conversation in rest room: Field Notes 19/2/7/3)

> Nurse C had pulled out a length of sticking tape during the dressing of a post-operative wound on a hand. The surgeon asked for a bandage instead. Scrub nurse D to nurse C: 'You shouldn't anticipate in plastic (surgery), its fatal.' (Field notes 19/2/7/4)

The scrub nurse uses the right hand for sterile instruments, and takes used instruments in the left hand. They are deposited in a dirty tray, or laid to one side (for example, in the case of the scalpel used to cut the muscle layer, which may be needed further) or in antiseptic if contaminated by body fluid (for example, the instruments inserted in the urethra during a trans-uraemic resection of prostate (TURP).)

Dirty instruments are dispatched to the sluice for washing and sterilisation via the hatchway in Theatres N., thus following a different route out of theatre than that into theatre of clean instruments. This completes the instrument circuit.

The Patient Circuit

1. A patient due for surgery is brought from his/her ward to the OT by a member of the portering staff. At General this may involve travelling some distance between buildings; the plastic OT is a free-standing block, as are many of the surgical wards. Patients are transferred from their bed in the ward to a trolley, upon which they are transported to the OT. Occasionally, if due for a very minor operation involving local anaesthesia, the patient may be brought to the OT in a wheelchair: this was only observed in plastic OT and endoscopy clinic (a non-sterile theatre attached to thoracic theatres not considered in this work). No patient may walk within the boundaries of the OT.

It is considered imperative that a nurse from the patient's ward comes with the patient. She is in charge of the notes, and presumably will ensure the right patient gets the right operation. If a nurse is not available to conduct a patient, as has been seen above (Field Notes 12/2/7/1), theatre grinds to a halt. A shortage of porters also affects the turn-round time, and the length of a list often depends on the available porterage. In principle it is possible to operate on a 'conveyor belt' principle. When a surgeon is beginning to sew up a patient, he will inform the anaesthetist that the operation is coming to a conclusion. The anaesthetist will then ask a nurse to phone the ward for the next patient to be brought to theatre. In practice this does not obviate long gaps between patients - especially in plastic theatres where the anaesthetic induction is relatively long compared to the short minor operations carried out (see Chapters 5 and 8).

Many other factors can lead to delays in patients arriving at theatre. The following extract from field notes describes a particularly slow morning in orthopaedic theatre.

10.30 a.m. There is a delay between patients.
Anaesthetic nurse: 'Orthopaedic surgeons are the worst, they arrange things at the last minute, and then they're not organised properly.'
Researcher: 'Why is that?'
A. N: 'They don't communicate. It's probably because most of them are foreign - they don't understand each other.'
The delay continues. The registrar has been sent to look for a patient, he cannot be found, but then is traced to a different ward.
In the meantime another patient has been added to the list - a 16 year old accident victim, who has had his pelvis pinned a week earlier, and now is to have the pins out. However he has not been seen that day by the house doctor and he has not signed a consent, and may not have been starved. The surgeon and registrar are not happy: the registrar is sent to the ward to sort things out.
Fifteen minutes later, the registrar returns.
Registrar: He had been consented. The staff nurse thought the age of consent was 18, but he's signed himself. His father has been waiting around to sign a consent.
Surgeon: (to researcher) This is the sort of thing that happens. The consultant tells the staff nurse who tells the houseman, and the houseman forgets or is too busy.
11.20. a.m. The patient finally arrives, but does not want a general anaesthetic as he had been ill after the last one. He has to be persuaded in the anaesthetic room.
(Field notes 17/3/7/3-4)

2. The patient is wheeled into the anaesthetic room on the trolley. In most OTs, this trolley, which brought the patient from the ward, will be used to move the patient into theatre, via the anaesthetic room. In thoracic OT, however, the patient is transferred while in the SC by the porter and the anaesthetist to a special sterile trolley kept within the OT

confines. This additional separation of ward (=non-sterile) from OT (=sterile) in thoracic OT is a historical consequence of the original plan to use it for cardiac surgery, where sterility is considered paramount.

> 'The consultants, who were kings - gods rather - conned the administration into building thoracic theatres as cardiac theatres. But it was never used for cardiac surgery. Thoracic has no need of special sterile precautions, thoracic is pus, TB and infected lungs in cancer.' (Interview with Mr P Field Notes 4/1/8/5)

This OT is now partly re-designated as day case OT, principally oral, plastic and other minor operations, and this special trolley is no longer used.

In the anaesthetic room no mention is made of the impending operation. The ward nurse talks to the patient while anaesthetist and assistant prepare the anaesthetic. The patient may have received a pre-operative sedative on the ward - this has a variable effect, some patients have to be woken up in order to be sure the general anaesthetic puts them to sleep. Because of the unpredictability of surgical lists, some patients not keeping appointments, others being admitted as urgent cases etc, a proportion of patients have not received pre-ops. These patients are usually less sanguine about the coming operation.

> The patient (a boy of 16) is frightened because he does not want to have a general anaesthetic, having had a bad experience previously. The surgeon intervenes 'We won't give you gas, that's what you don't like isn't it.' '
> Patient tearfully says he wants a local.
> Surgeon Mr K: 'There isn't really a local anaesthetic that we can give for this. But we'll just give you an injection to send you to sleep.' Patient has no choice but to

acquiesce. (Field Notes 17/3/7/5)

The anaesthetist checks the case notes, which have been brought with the patient under her/his pillow. These will be the responsibility of the anaesthetist from now until the patient enters the recovery room, when they will be handed to recovery nursing staff. Based on patient weight, the dose of anaesthetic will be calculated. A cannula is inserted into a vein in the left index finger - this will be the access route to the patient's circulation in cases not requiring a drip. The syringe containing anaesthetic is attached to the cannula, and injected. As the anaesthetic is administered a veil of silence falls over all in the room. All focus their attention upon the eyes of the patient, as they close, and the anaesthetist checks for unconsciousness, tension evaporates. The blankets are whisked away, and put on a bench or work-surface - there does not seem to be a place set aside for them in the anaesthetic room - while the anaesthetist attaches a face mask to the patient, and connects a ventilator bag with which the patient's respiration is maintained until connected to an artificial ventilator in theatre; this bag is squeezed to breath the patient by the assistant or anaesthetic nurse. The ward nurse departs.

These processes may be summarised:
(a) The patient is brought passively into the OT
(b) The patient is rendered unconscious
(c) The patient is rendered unable to breath, and dependent upon theatre personnel for life-support
(d) The patient is stripped of clothes, and all vestiges of identity safe a hospital bracelet and hospital notes.

They constitute the separation of the patient from the outside world, completing the removal of a patient's identity which may have already undergone a degree of 'stripping' (in Goffman's (1968) terminology) in the period since hospitalisation.

Turner has defined these rites of separation as 'symbolic behaviour signifying the detachment of an individual .... either from an earlier fixed point in social structure or a set of cultural conditions' (1967:94).

3. The sleeping patient is wheeled through the closed doors at the other end of the anaesthetic room into theatre. When moved to the trolley from a ward bed, a canvas sling has been placed under the patient, with two poles inserted into flaps on either side. By lifting these poles, the anaesthetist and assistant (or other handy personnel) can move the patient from the trolley to the operating table. The poles are removed, and placed on the trolley, which is wheeled out through the doors on the right (i.e. not through the anaesthetic room) and left in the SC for the duration of the operation. This exercise may occasion comments on the weight of the patient, an apparently legitimate topic of personal comment while the patient is unconscious. (Field Notes 15/2/5/3; 17/3/7/6; 24/6/7/2)

The anaesthetist's first task is to connect the patient to the artificial ventilator, and select the volatile anaesthetic agent to be used during the operation. These come as gas canisters which are attached to the mobile trolley. The patient's continued anaesthesia will thus be assured, and monitoring of the patient is now achieved by connection of ECG leads which provide pulse, respiration and heart rhythm information on a VDU mounted above the anaesthetic trolley. If a drip or blood products transfusion is anticipated by the surgeons, the anaesthetist will insert a cannula into a vein, probably the median cubital vein inside the elbow.

While there is a co-operative atmosphere between most ' anaesthetists and surgeons, sometimes tension can occur at this point. The surgeons may be waiting, gowned and masked for the anaesthesia and preliminaries to be completed.

The anaesthetist and any assistants congregate around the anaesthetic trolley, positioned near the patient's head. For an abdominal, thoracic or lower limb procedure, the surgeon stands on one side of the patient, with scrub nurse on her/his right, and an assistant opposite. Observers, including junior members of the surgical firm, stand where they can get a view, without threatening sterility. At the foot of the patient, or to one side, various equipment including a rack for used swabs, and possibly a bucket to collect blood drained from the operation site will be positioned, and the circulating nurse and any student nurses stand here. From this position they can see little of the operative technique but are able to observe the organisation of operations, and learn how to service the surgeon. If the theatre sister is not the scrub nurse s/he may take a closer interest in the operation itself, and may enter into banter or conversation with the surgeons. The anaesthetic nurse also has more freedom to watch the surgery.

The researcher and other observers had freedom to move around the theatre area, but would often be expected to try to gain as good a view of the operation site as possible (Field Notes 17/2/7/3; 24/2/7/5; 3/3/7/3), including once being forced to scrub and assist (15/2/5/3). Unscrubbed personnel must guard against contact with the sterile field, and be ready to move non-sterile equipment for surgeons (e.g. microscope, lighting, stools).

During this phase the focus of activity is the sterile field and the operative procedure. Although other activities are taking place (continuity of anaesthesia and monitoring, checking fluid loss, ordering blood products, arranging subsequent operations), these must not impinge upon the focus.

> An 80 year old patient had been given a spinal anaesthetic because it was considered that he was a poor risk for general anaesthesia. During the operation, a trans-uraemic resection of the prostate (TURP) it transpired that the spinal had not worked. The surgeon, Mr M, complained that whenever he used the diathermy to resect part of the tumour the patient moved, and there was clearly poor analgesia. The anaesthetist gave further doses until the top limit of the spinal drug had been administered with no success, and so had no choice but to induce general anaesthesia despite the risk. (Field Notes 12/2/7/2)

There is a timeless quality to these periods in the OT, with little conversation except between the surgeon and assistant. Disruption of these rules was strictly punished:

> Mr M (demonstrating blunt dissection to assistant, with house doctor looking on): 'Now you put your finger in there; don't go any further. But you see how far you can go with blunt dissection. If I had used a piece of metal in there we'd have done some trouble.'
> Senior Registrar: 'Winkle it?'
> House Officer (barely audible): 'Very Freudian.'
> Mr M (sharply): 'Psychiatry you're going in for is it? (pause) We don't say that.'
> House Officer: 'No ... It's just something I've heard.' (Field Notes 17/2/7/2)

This imputation of a sexual equivalence to surgical activity was "dirty", and out of place in the operating theatre. It was punished by the worse insult (a future in psychiatry). The researcher was also out of place on one occasion:

> The researcher was observing in thoracic OT. Because of some confusion his presence had not been agreed in advance by the surgeon Mr F. The anaesthetist Dr M introduces the

researcher once the first operation, the excision of a piece of dead bowel, is under way. He explains his presence.
Mr F: 'I don't want him here. We could have anyone coming in here. Nobody knows who people are. There are too many people here already.'
The researcher makes his apologies and leaves. (Field Notes 23/2/7/4)

Katz has noted (1984) that the times of most tension occur at the boundaries, when the skin is broken or sewn, during anaesthesia. Both the above occasions occurred in the middle of an operation, and the present study suggests rather that the entire period of the operation is seen as dangerous, in the sense that pollution in the form of dirty talk or extraneous personnel can be highly threatening. Behaviour during this period is restrained, even the outspoken Mrs V reserving her outbursts for before and after the operation itself.

The proceedings conducted during this phase are characterised by the patient's dependence on others for her/his existence. In this dangerous condition the surgical patient lies naked and unconscious, reduced to so much meat, oblivious to time, physical changes and pain. Her/his identity is defined only by a plastic tag around the wrist, and the name of the operative procedure written on a board in the theatre. In such a state, the change is wrought from one status to another.

In this status passage, the period on the operating table is the transitional (Van Gennep 1960), or liminal phase (Turner 1967, 1968). As Turner puts it 'during the intervening liminal period, the state of the ritual subject is ambiguous;'he passes through a realm which has few or none of the attributes of the past or coming state.' (1967:94)

4. When the skin suture is begun, the surgeon informs the anaesthetist that the operation is complete. S/he will now time the ending of anaesthesia to coincide with the completion, by administering oxygen to awaken the patient. Dressings are supervised by the consultant surgeon but often applied by assistant surgeon. Surgeons then depart, and used equipment is cleared away. Monitoring equipment is detached, an antidote to the muscle relaxant (if used) is administered, and the patient is lifted on to the trolley, which has been brought back into theatre. A blanket is placed over the patient, and s/he is addressed by the anaesthetist, 'Wake up (name)...., it's all over' and is asked to cough. The patient once again has an identity, thus ending the "liminal" phase of the status passage and beginning the processes of re-integration. The patient is made to say something, to assert his/her agency, but most likely will then go back to sleep for a considerable time.

The patient is wheeled out of theatre by the anaesthetist and assistant, via the side doors, into the recovery room, where nursing staff are continually present to observe the patient.[5] The anaesthetist will check the patient's pulse and hand the notes, which s/he will have written up during the operation with details of heart rate and respiration, drugs given etc., to the recovery nurse.

There are liminal aspects to the recovery space, which is still within the OT boundary.

> Nurse A: 'They (ward nurses) don't like you in recovery. You're in between.'
> Nurse anaesthetist: 'You're definitely in-between.' (Field Notes 23/2/7/1)

Ward nurses who go to collect a patient from the OT are contaminated too.

> Nurse B: 'When you bring a patient back from theatre, the other nurses say "over there". We were taught that you welcome a patient back. After all, they've been to theatre.' (Field Notes 23/2/7/1)

The anaesthetist retains authority over the patient, deciding when s/he can return to the ward, or occasionally, be moved to Intensive Therapy. The surgeon has authority only when the patient is on the table, the anaesthetist oversees the induction and recovery periods.

> A patient had been operated on for a brain tumour, and was in recovery. The anaesthetist Dr A was called to recovery an hour after the operation was complete, and having conducted blood pressure and ECG tests returned to theatre to tell surgeon Mr C that the patient 'was a bit flat'. He suspected a sub-arachnoid bleed which was threatening life by putting pressure on the brain, and summoned the surgeon, fully scrubbed, to recovery to assess the requirement for re-operation. The surgeon agreed with the diagnosis and an emergency procedure was instigated. (Field Notes 24/2/7/6)

Thus a patient who was apparently being re-integrated was returned to a liminal phase, and the status passage was seen as incomplete until the completion of the second operation, which was carried out by a different surgeon as Mr C was occupied.

Conclusion

This chapter has looked at the activities within the OT and developed the notion of circuits of hygiene which organise and order these activities to ensure the passage of patients through the OT safely, without threat of pollution during the vulnerable phase in which the very continuity of existence is outside their own control.

In the latter part of the chapter, the movements performed by patients were described in detail, and the concept of these movements, and the activities performed at the different stages upon them, as reflecting a loss of a previous status and the imposition of a new one was explored in a preliminary way. This idea, of surgery as marking a status change will be enlarged upon, in Chapter 7, as a fundamental theme of this study. The stages of the operation, with its resection, and transgression of boundaries between internal and external has been dealt with through the notion of a circuit of hygiene, demarcated by different spaces, relationships of personnel, and time sequence.

The latter part of this chapter has demonstrated the dependence of surgical organisation upon these highly structured circuits of hygiene. As has been shown, these circuits have meaning not just in practice, but in terms of an underlying theory by which things are retained in their appropriate relationship to each other. This theory is made explicit through the practical techniques of surgical sterility, which ensure that nothing is 'out of place'. The spaces within the OT, the garb and the routines all reflect this discourse on surgical sterility.

This discourse is commonly known as 'asepsis', and the procedures involved are described by informants as 'basic aseptic technique' - methods of keeping surgical wounds and infective agencies apart. But as has been seen, some aspects of asepsis are commonly disregarded (for instance correct masking), while others are recognised as of very dubious value (the sterile corridor, overshoes), and others are conventional and arbitrary between OT and OT (washing floors, access of trolley from ward to theatre). Why are many aspects of aseptic technique apparently little more than ritual? Asking informants provided no answers, and in some cases incomprehension. In the next chapter the practices of surgical sterility are investigated from another angle: their historical development.

CHAPTER 4: THE HISTORY OF SURGICAL STERILITY

Introduction

In this chapter one of the principal techniques which defines surgery as a distinctive specialty, the utilisation of a range of sterile practices, is subjected to investigation, to assess how it contributes to the authority and privilege of surgery and surgeons. The image of the surgical team: masked, gowned, in gloves, boots and caps is, in the popular mythology of medical hagiography, indicative of, and testimony to commitment, heroism and expertise. This chapter assesses the derivation of this symbolism.

The possibility that there might be some complexity involved in this enterprise were signalled (as was recorded in the last chapter) by evidence of inconsistency between this ideal of sterile garbing, and the reality, as observed during fieldwork. Whereas techniques to do with the sterilisation of instruments, pre-operative washing practices,and gowning were observed fastidiously by all members of the operating team, when it came to other practices, considerable variation and laxity in observation was apparent. The most obvious was in relation to the use of surgical masks. Whereas nursing staff observed what may be described as the 'received knowledge' in the use of masks, namely, that they should be worn at all times in the confines of the operating theatre, clinical staff would often discard masks in theatre when no patient was present, or even, when a wound had been sutured and was being dressed. Some surgeons, and most anaesthetists wore masks so only the mouth was covered. One anaesthetist, Dr R, did not wear a mask throughout an entire list (Field Notes 1/7/8/4). In general,

the degree of observation of mask use was indirectly proportionate to status.

Other anomalies derived from the ambiguity of the boundaries whereby theatre is designated a 'sterile zone', accessible only to authorised (and hence presumably, sterile) personnel. While ward nursing staff were required to put plastic overshoes on before entering the theatre complex, discarding them on exit, theatre porters, who move between theatre and wards continually, do not observe this ritual: they wear trainers or plimsolls wherever they go in the hospital. (N.b. although permitted into anaesthetic rooms, porters were personae non gratae in the operating theatre itself.)[1]

The researcher faced a methodological problem when trying to understand these anomalies. Based on his observations, it appeared that there was an ideological component to sterile practices, in that they appeared to symbolise a wish or desire for sterility, a statement of what **shall** be rather than what **is**. The lack of observance of details of the practices betrayed them as symbolic as well as rational. However, when the researcher attempted to address this aspect of sterile practice in interviews with actors, he was faced with incredulity when a non-rational component to sterile practice was suggested. Questions of this sort threatened the research bargain, and could not be pursued. This problem led the researcher to address himself to a different approach to the meaning of sterile practice - through its history. This chapter reports on this investigation.

Surgical sterility: an historical investigation

The story of the innovation of surgical sterility is a well-documented episode in medical history. Historians of medicine (for example Fisher 1977; Smith 1979; Youngson 1979) have descibed the development of the technologies of the sterile,

which they conclude derived from the insight of Joseph Lister, the Victorian surgeon who innovated antiseptic methods, and explained the role of micro-organisms in post-surgical wound infection. His techniques, the use of a carbolic acid antiseptic and sterile dressings were the direct antecedents of modern aseptic operating practice, these histories conclude.

Initially, the standard history continues, Lister met with great resistance, he was derided and ostracised, his practices were mocked, and his research results scorned. Yet by persistence his opponents finally saw the truth, and medical progress was assured. The accolades heaped on Lister are due thus not only for his brilliant discovery, but for his dogged pursuit of it in the face of strong opposition.

Subsequent to this eventual recognition (the tale continues), Lister's antisepsis was refined, by the innovation of rituals of clothing and techniques of heat-sterilisation, into the asepsis which typifies surgical sterility to this day.

Such a history of antisepsis and asepsis takes scientific rationality (as opposed to irrationality in other areas) as its paradigm. Thus Lister developed his innovation faced with a medical profession which for reasons usually ascribed to inherent conservatism and personal idiosyncrasy, resisted Lister's development from 1867 onwards of antiseptic methods, such as the carbolic spray, catgut sutures and airtight dressings. After years of vilification they finally realised the validity and veracity of these methods. Subsequently, and as quickly as they had previously been tardy, the same medical profession innovated new aseptic methods, at the expense of Lister's methods, because they are more effective, or less troublesome, or 'better' in some other respect.

Problems with this history

Unfortunately, for the facility of deriving understanding of sterile practice, such a history is problematic for three reasons: firstly, it operates from the benefit of hindsight, to portray the progress of ideas from 'false' to 'less false' to 'true'. It lacks a sense of the social context in which 'false' ideas could still be regarded as true at a particular historical moment.

Secondly, it individualises the struggles between traditional and innovative positions, explaining resistance through the personal characteristics or individual interests of the protagonists. It ignores the wider social context in which science and medicine were being conducted.

Thirdly, this account obscures the interesting question of precisely how the 'secondary' innovation of asepsis, and particularly the use of masks and other sterile garments came into being. It becomes clear when the primary sources are excavated that for most of the period in which antiseptic practice was being innovated, no official (in the sense of being worthy of inscription) interest whatsoever was paid to sterile garments during surgery. Lister, the innovator in the process of antisepsis was as conservative in this respect as his contemporaries, favouring the old frock coat, stiff with blood and pus (Godlee, 1924:129), and in his memoirs (Lister 1908) entering into polemic against the ritual of dressing for surgery which was first adopted by his junior, William MacEwen (later Sir William) as early as the 1870s.

By 1914, however,a series of photographs and written sketches of operating theatres of the famous surgeons of the day documents in some detail the practices of these men, and in these pages is to be found a straight report of predilection for gown, mask, glove etc. These innovations now are accepted

without any sense of negative (or any) evaluation. The whole matter of surgical garb seemed to be a non-issue.

An alternative view

These three criticisms have not been addressed by previous histories, perhaps being shrugged off as unfortunate gaps in the historical record. However, for the current enterprise of understanding the significance of sterile technique in surgery, such gaps cannot be overlooked.

An alternative view must start from this discontinuity: firstly, the innovation of antisepsis is strongly resisted (indeed never entirely accepted, as this chapter will demonstrate); secondly, a subsequent and to some extent concurrent innovation, which was if anything more radical in its impact on surgical practice, was accepted with little more than a murmur, one of the few dissenters being Lister himself. Within the standard history this discontinuity is glossed as scientific progress, the consequence of Lister's unlikeable personality and the irrationality or the personal greed of Lister's opponents. As a consequence it has been veiled in silence. To make the silence speak, and in turn to start to develop an understanding of the social context of the innovations which lead to today's surgical sterility, a quite different history will now be posed. It will be argued that Lister was accorded accolades by the medical profession, to this day, only when his ideas for sterile surgical practice - the use of antiseptics - no longer threatened to become received knowledge, because they had been superseded by other quite different practices, namely aseptic techniques. Asepsis was in fact not a development of Listerian antisepsis at all, but an entirely novel process, based on a completely different theory.

Such a radical re-writing of a well-known episode in medical history requires considerable substantiation, and the first section of this chapter surveys in detail evidence drawn principally from primary source material from the period 1867 to 1916, the fifty-odd years in which antiseptic treatment of surgical operation wounds was innovated and then replaced by the aseptic techniques which have subsequently remained intact to the present. It is apparent that some of the popular histories have relied too heavily on two inherently biased sources in their expositions, firstly, the various biographies of Lister (Godlee, 1924; Bland Sutton, 1927); and secondly, and more interestingly, the sporadic eulogising on occasions of Lister celebrations by (often anonymous) medical correspondents who have been apparently quite willing to re-write medical history in sometimes blatant fashion.

The first part of this chapter outlines an alternative based on readings of primary source material, and relating these to the context in which sterile practices were innovated. When this new history has been set out, it will be possible to consider the congruences between antisepsis, asepsis, and the dominant ideas and ideologies of Victorian medicine and society, using a method of structural analysis to construct the 'deep structures' of the different theories of sterility, and of the humoralist theory, which had been so important in medical theory since Galen.[2]

The context of Listerian antisepsis

In 1867, Lister published a series of papers in the Lancet with the unassuming title: 'On a new method of treating compound fractures, abscesses etc.' (Lister 1867a) In these papers he described the use of carbolic acid, a substance previously used for its deodorising properties. Used on dressings, it had resulted in an impressive series of recoveries from compound fracture, a malady at that time possessing a mortality rate of around 60 per cent.

These papers, and a second series published the same year (1867b), did more than report a practical method; they committed Lister to a theoretical position, germ theory, by which he sought to explain his findings. This theory, derived as it was from Pasteur's work on fermentation, was in opposition to current theories of infection, which at that time generally identified the entry of oxygen into wounds, or the foul emanations of miasmata as culprit. Germs, whose microscopic existence was slowly being recognised, were considered irrelevant to the process of infection, and were believed to develop by spontaneous generation. As Farley and Geison (1974) have demonstrated, Pasteur's theory of germs was extremely controversial in mid-nineteenth century France. Not surprisingly, in 1867, Britain was still dominated by spontaneous generationists, and germs were regarded either as artefactual or results of chemical action.

Lister further committed himself to a position, derived from his early work on blood and coagulation, that inflammation was pathological, and not the natural course of wound healing; a position contrary to received knowledge of the time - that purulent inflammation ('laudable pus') was a necessary part of wound healing. Lister's apparently impressive results for wound treatment were therefore intimately tied up with his theoretical positions concerning the germ theory of infection.

As Stern (1941) has suggested, unlike other surgical innovations, such as anaesthesia, Listerian antisepsis was dependent upon theory, in addition to innovative practice. The controversial nature of Lister's theory was particularly significant in relation to surgery. Surgeons saw themselves as firmly in the Galenic tradition of humoral theory; wound infection was explained by a theory of foul emanations or miasmata, a theory developed within the humoralist tradition by an eighteenth century physician, William Cullen. Cullen divided causes of infections into:

Miasmata - emanations given off by non-human sources, and

Contagions - emanations from humans suffering from a disease (Thompson, 1827:Vol I,541).

Both kinds of emanation were transmitted by air, and this doctrine therefore emphasised ventilation and the prevention of overcrowding, as preventive measures against infection. In humoral theory it is a dialectical relationship between patient constitution and environment which explains disease - both are essential for an aetiology of illness.

Every disease, in the Galenic system had:

a) an **initial** cause. e.g. heat, cold, a blow

b) an **antecedent** cause. i.e. a bodily predisposition

these combine to create

c) the **cohesive** cause

which is an organ which is prevented from functioning properly. e.g. an excess of phlegm on the stomach. (Nutton 1983)

It is c) which leads to disease e.g. indigestion.

The cause of infection was atmospheric corruption acting on a body already predisposed to disease. Cullen had refined the corruptions into miasmata and contagions as noted above.

So Nature acts on Human

but it was also possible for Human to act on her/himself (aptitude for disease) for example through ignorance or poverty.

So **initial** causes, in the form of miasmata etc., could cause disease, but the **antecedent** causes were also important, and the susceptibility of people through bad diet, poverty and bad habits were thus also targets for a reforming medicine, in the shape of the burgeoning public health movement.

Humoralism was thus a strong force in Victorian medicine, which identified dangerous environmental conditions as the causes of the dirt disease epidemics of the nineteenth century. Snow was able to stop a cholera epidemic by removing a well-pump handle - he did not need to understand germ theory. The miasma from bad water was sufficient cause in humoral theory, and he took appropriate action. Florence Nightingale was a life-long opponent of germ theory, but her reforms were effective in reducing infection (Rosenberg, 1979). One of these was her insistence upon 'cleanliness'.

That humoralism was dominant in surgical discourse may be seen from this extract from a lecture by the surgeon Hudson in 1869:

> Women were delivered in the same room where other women recovered from or awaited childbirth. Their bloody discharge filled the air with noxious smells, an animal miasmata (sic) which doctors likened to the foul vapours emanating from the debris-filled streets - civic miasmata. (quoted in Parsons, 1978:141)

The treatment of surgical patients thus derived from this theoretical principle of humoralism/miasmata, which recapitulated the public health emphasis on 'cleanliness'. In 1862, Mr James Paget's address in surgery to the British Medical Association concluded that:

> '... treatment may be summed up in two words - repose and cleanliness. The cleanliness should, however, include more than it commonly does, such as the use of .... baths, and of the frequent change, not only of dressings .... and of bed-linen, but of beds .... the best plan is to let the patient be as ready as possible in the ordinary mode of prudent life .... to observe all rules of personal cleanliness, to provide abundant fresh air, and a sufficient or a liberal mixed diet. (Paget, 1862)

Some of Lister's practices were compatible with such an approach, although humoralism emphasised the susceptibility of the patient as much as the danger from the environment. But, as it will be seen, Lister's notion of cleanliness was in fact unlike that of the humoralists, and would be totally UNacceptable. With his filthy frock coat, he may well have been in the rearguard of a new cleaner surgery.

Part of the confusion and misunderstanding of Listerian techniques which were so to infuriate Lister may have derived from the different usage of the term 'cleanliness' by Lister from that of the humoralist/public health school. In 1879, the Lancet was willing to acknowledge that Listerism had advantages if a 'pestilential atmosphere' existed. But (it argued) it was an 'antisepsis of cleanliness' that was paramount. 'The task of surgery is to establish the most favourable possible surroundings in which to operate, not to devise means which enable operations to be performed in dangerous surroundings.

> If special chemical agents are to be trusted to, and the established precautions of hygiene ignored, evil will sooner or later overtake us. Without these, these (chemicals) are unsafe; with these, they are, it is contended, unnecessary. (Lancet, 1979:247).

Hygiene - meaning clean air, comfort and cleanliness - not chemicals, made surgery safe.

Lister and 'Cleanliness'

Lister was thus attempting his innovation against a backcloth of a dominant commitment to humoral ideas. His theory emphasised the initial cause - the germ, and ignored the antecedent of patient constitution, thus collapsing the dialectic into a single over-riding cause of wound infection. Hygiene for Lister was concerned only with destroying germs, not with reducing the susceptibility of the patient through enhancing his or her 'comfort'.

This is not to say that Lister was unaffected by the arguments of a humoralist/public health approach, he was willing to go along with humoralism to an extent, and his immunity from this ideology has been overemphasised by his biographers. For example, while Lister's approach de-emphasised the susceptibility of the patient, and emphasised the threat from without, in 1870 - three years after having spelt out his anti-humoralist germ theory of infection - he was willing to use terminology more appropriate to humoral (miasmatic) theory. He described hospital conditions where corpses of cholera victims, pits full of refuse and

> emanations from sores, poured directly into the confined atmosphere. (Hospital disease was due to) .... the putrid exhalations from the patients. (Lister, 1870:40-2)

This statement demonstrates Lister's continued commitment at this time to the belief that the atmosphere was the predominant vector of infection, in this case, with the wounds of other patients as the source from which infection developed, and against which sterile carbolic dressings protected. Although believing that the operation itself was implicated as a source of infection, the barrage of attacks since his original papers may have led him to temporarily moderate this aspect of his position.

However, a year later Lister was once again concerned with making the operation germ free. He innovated the universally unpopular carbolic spray, a device originally intended to kill the imagined clouds of airborne bacteria. The spray had the effect of continually disinfecting the hands of the operator, and assisted in the process of antisepsis which pre-operative washing of the hands in carbolic acid instigated (Lister 1871:32).

Here was the crux of Lister's scheme, although it was Barnes, a follower of Lister, who made the significance of the innovation explicit. Pyaemia (hospital fever) is spread, he wrote in 1874:

> ... in the articles of dress, the hospital appliances, the nurses, the students and the surgeon himself (Barnes 1874:179).

This statement codifies the essence of the theoretical principle behind antisepsis, namely that it was the intervention of the surgery itself which was responsible for infection in those operations where no lesion is present prior to surgery. It contrasted with the received knowledge of humoral theories, in which it is the influence of some indeterminate environmental factor, which, in conjunction with the susceptibility of the patient, precipitates infection.

Lister himself was unwilling to acknowledge the irrelevance of the spray to his practice until 1890, at which time he wrote, 'I feel ashamed that I should ever have recommended it for the purpose of destroying the microbes in the air.' His reluctance to abandon it, he wrote, was that it performed the role of 'unconscious caretaker' (Lister, 1890:379). The spray was superseded by refinements in dressings, Lister concluding that he had overestimated the number of airborne germs compared with the potential for the ingress of infective agents on the hands of the operator. Carbolic and other antiseptic agents were used principally in his later practice to cleanse the hands of the surgeon, and the instruments used in operations.

If Lister had ever had any interest in the notion of hygiene as meaning clean air, comfort and cleanliness by then he had lost it. But the public health movement applied to hospital practice, by such proponents as Simpson, Farr and Nightingale emphasised just such ideas of cleanliness in the vicinity of the sick: removal of overcrowding, regulation of diet, bowels and moral constitution.

Cleanliness and morality had become associated in the Victorian social order; Lord Shaftesbury believed that the amount of political discontent existing among the masses was directly related to their insanitary conditions of life. The Bishop of London warned in 1853 that people immersed in hopeless misery and filth were for the most part inaccessible to the Gospel (Smith, 1979:218). Richardson, an innovator of anaesthesia, in 1875 delivered his polemical Hygeia: A city of Health, in which he argues that 'civilisation, unaided by special scientific knowledge, reduces disease and lessens mortality' (Richardson, quoted in Stevenson, 1955:6). Civilisation, however was not industrial capitalism - this in Richardson's view was 'imperfect civilisation', rather it was the world scoured by sanitation, and bodily and spiritual cleanliness:

> Its principles are preventive .... pure air, proper nourishment, a regulated temperature, bodily exercise, cleanliness, mental education, good morals (ibid:9).

By the end of the century, by which time antisepsis was supposed to have been entirely innovated, Richardson was arguing that it was of very dubious virtue:

> Let us cleanse our outward garments, our bodies, our food, our drink and keep them cleansed .... let us isolate the contagious sick as they become contagious. Then all elaborate experiments for the prevention of disease will appear, as they are, mysterious additions to evil, which ought not to exist, and which of themselves might re-introduce death into a deathless paradise (ibid).

Cleanliness was more than a physical state, it was a moral category, and it was a 'commitment to cleanliness' which purified a person. Antiseptics did not require such a subjective commitment, they could be used on a body regardless of its moral status. Turner comments:

> Christian theodicy could not regard disease as a morally neutral category, since diseases were a sign of the health of the soul. .... If God is good, then he cannot be the author of disease, which is written in the moral responsibility of the human being. If God is all powerful, then he must be the author of disease, which carries within it a moral lesson. One partial solution to the paradox .... was that although human beings are morally responsible for the diseases which invade them, they are also ultimately responsible to God for the stewardship of their bodies (Turner, 1984:215).

Lister's position on these issues of pollution, hygiene and cleanliness was extreme - he did not recognise antisepsis as connected with popular ideas of cleanliness. His operating theatre, a colleague wrote, 'was grimed with the filth of decades, I suppose it was occasionally cleaned, but such process was never in evidence. The operating table looked as if it was never washed. ... No one dreamed of washing his hands before starting work' (Leeson, 1927:108). In 1875 Lister wrote:

> There had previously always been an annual cleaning of the wards of our infirmary ... I used to consider whether the patient would get more harm from the want of cleansing of the wards, or from the transportation. .... I thought them more likely to get harm from the transport, and this being year after year my conviction, it is now three years since any cleaning took place on these wards of mine (Lister, 1875:215).

He was explicit over cleanliness of wounds:

> If we take cleanliness in any other sense than antiseptic cleanliness, my patients have the dirtiest wounds and sores in the world. I often keep on dressings for a week at a time, during which the discharge accumulates ... the altered blood with its various shades of colour convey often both to the eye and to the nose an idea of anything rather than cleanliness. Aesthetically they are dirty, though surgically clean (ibid:254).

In the same article Lister had boasted that his wards recently had had 71 patients to 55 beds, and that these were crowded closely together (ibid:253).

These differences in emphasis between contemporary notions of hygiene and Lister's own begin to explain the resistance which antisepsis faced. Its innovation was being attempted in a climate which was strongly influenced by religio-moral notions of pollution, and the public health movement commitments to hygiene, sanitation and reducing overcrowding. In such a climate Lister's 'secularisation' of cleanliness was unlikely to find favour. In the next section the specific details of opposition to antisepsis will be assessed, in order to evaluate the proposition that it was humoralism which constituted the antagonism to Lister's ideas.

Opposition to germ theory

The extent to which history can be rewritten is evident from the opening paragraph of a Medical Research Council report published to mark the centennial of antisepsis:

> The first reports on antisepsis in surgery were published a hundred years ago (Lister 1867). Clinical benefits of antisepsis were **immediately apparent**, and the subsequent development of the aseptic method, of isolation methods and of antibiotic therapy greatly strengthened the defences against bacterial infection (MRC, 1968: my emphasis).

There was an immediate appraisal, but it was mostly negative. In 1868, the Edinburgh Journal of Medicine carried a long paper in which Hughes Bennett assessed the evidence for germs. In an evaluation which in no way can be discounted as unscientific, the microscopic properties of particles were investigated, with the conclusion that the observations support the theory of spontaneous generation, a theory in opposition to germ theory, which postulated the doctrine 'every living thing from an egg.' Hughes-Bennett suggested that:

> Our modern view is .... that material substances found in the atmosphere, and in plants and animals, influenced by certain forces, have peculiar properties communicated to them. .... that accidental causes are capable of communicating .... these properties to tissues that do not previously possess them, is certain. .... an aggregation of molecules produce a vibrio which at first motionless, has contracting communicated to it, and thereby lives. .... there is manifest inconsistency in supposing that the same kind Providence which alone can create life, should have done so only once in ages past (Hughes Bennett, 1868:832).

The detail of Hughes Bennett's discourse may have been in the mind of another surgeon, Thomas Nunneley, when he stated the following year at the British Medical Association that:

> .... the theory and reasoning by which the antiseptic treatment of wounds is supported appear to overlook facts open to all the world, to disregard observations familiar to every person through all ages,.... We may probably with safety deny the existence of germs in the number and universality maintained by Pasteur and Lister (Nunneley, 1869:251-2).

The rejection of 'germs' as the agent of infection may be considered the first of the grounds upon which Listerian antisepsis was rejected. It was based on a refusal to accept (a) the ubiquity and (b) the capacity for reproduction (as opposed to spontaneous generation) of germs.

Lister recognised how badly these ideas flew in the face of current doctrine. In 1883, sixteen years after his first pronouncement, he felt compelled to implore his peers to accept the technique of antisepsis, even if they were not receptive to germ theory:

> You need not believe in the germ theory at all .... All you have to believe is that there are such things as putrefaction and **other septic agencies**, and that our wounds are liable to these, and that they are very pernicious, and that these things **come from without**, and that we have the means of preventing them by various chemical agencies. .... And then as to practice, it is not a very difficult thing to wash your hands in a carbolic solution, and have your instruments in their carbolic solution for a quarter of an hour before you operate. It is not a very difficult thing to wrap around the limbs a suitable envelope of antiseptic material (Lister, 1883:855, my emphases).

This, however was mere verbal legerdemain by Lister, for the propositions add up to acceptance of germ theory, and would have been unconvincing as a rapprochement. Furthermore they emphasis the initial, **exterior agency** of infection, and ignore entirely the antecedent cause: patient susceptibility, in explaining infection. It is an anti-humoralist statement. The French surgeon Lefort stated that germ theory was 'absolutely unacceptable' in its application to clinical surgery for just this reason. He believed

> in the **interiority** of the principle of purulent infection in certain patients. That is why I oppose the extension to surgery of the germ theory, which proclaims the **exteriority** of that principle (Lefort, quoted in Stern, 1941:195, his emphases).

It is also extremely significant that Lister had to say these things. Contrary to the traditional histories of antisepsis, the time-scale indicates that Lister's theory and practice were still far from accepted four years after the supposed watershed of 1879, when surgeons at an International conference in

Amsterdam gave Lister a standing ovation, and antisepsis was supposed to have been victorious (Fisher 1977:252). Further evidence is easily come by in primary source material: in 1883, a report of a seminar opposing antisepsis by Dr W.J. Simpson, Medical Officer of Health for Aberdeen, noted only one pro-Listerian among the seven speakers (British Medical Journal, 1883:815). Surgeons were evading antiseptic technique well into the 1890s in some establishments (Smith 1979:271-5).

Although a number of reports of the utility of carbolic acid dressings were appearing in the medical press, London surgery had adopted a strongly anti-Listerian position. In 1874, the Lancet Sanitary Commission report upon the wards of St Bartholomew's Hospital advocated:

> ventilation of the wards and of the wounds, cleanliness, and the removal of all offensive and decomposing matters, the "preparation" of patients for operation, the non-aggregation of a large number of wounds in a given space, isolation, personal attention to personal hygiene - in fact, the strict observance of the well-known rules of surgery are the chief factors in the successful treatment of surgical cases at St Barts Hospital (Lancet Sanitary Commission, 1874:246-7).

Many of these suggestions can be seen as part of the later aseptic doctrine, with the exception of the ventilation of wounds. The emphasis upon ventilation, which has been mentioned before, is a recurrent theme in Victorian hospital policy. In 1881, Agnew posed these principles:

> When possible, the room occupied by the patient should be large, well-ventilated, and so situated to admit an abundance of sunlight. An open fireplace will always insure (sic) in winter at least the best interchange of air. The evils attending an insufficient amount of pure

> air are not properly appreciated. Much of the mortality in hospitals is to be attributed to this source of danger. The presence of a number of open and suppurating wounds is well calculated, by the putrescent emanations which they emit, to deteriorate the atmosphere of a ward or building, and hence arises the perils of overcrowding in such places (Agnew, 1881:271-2).

Agnew calculated that each patient should have 1600 to 2000 cubic feet of air, this being changed every 25-30 minutes, day and night.

This contrary approach to hospital infection, with its emphasis on pure air, removal of overcrowding, and careful nursing may be regarded as the second of the grounds by which Listerism was opposed, for as has been seen, Lister prided himself on the very opposite, seeing virtue in crowded, dirty, smelly wards. Another opponent wrote:

> With care and watchfulness and scrupulous cleanliness in well-managed hospitals and private houses, there is little left for the complete antiseptic treatment to do. ... I hope there will be no attempt to prove that antiseptics are self-sufficient when there are neither good sanitary arrangements nor skilled nurses nor very watchful surgeons (MacCormack, 1880:86).

Lister and Simpson

James Simpson, the English surgeon who had been the innovator of anaesthesia in the 1840s was a particularly vocal opponent of Lister and antisepsis. His opposition to antisepsis has been variously explained; Lister's biographers have put it down to Simpson's vested interest in a method of reducing blood supply to wounds using metal rods - the technique of 'acupressure'

which he had developed (Fisher, 1977; Godlee, 1924:198-202), and this view has also found its way into histories of medical innovation (Stern, 1941), as the techniques advocated by Lister, carbolic dressings and catgut ligation, were intrinsically opposed to acupressure methods of wound healing.

Simpson also had had a long-standing feud with Syme, Lister's father-in-law, and according to Stern (1941) and Fisher (1977), this antagonism extended to Lister himself. However, as other writers have noted, most notably Selwyn (1965) and Toledo-Pereyra and Toledo (1979), Simpson was a prominent member of the public health movement and the author of 'Hospitalism', a pamphlet of surgical statistics, which sought to demonstrate, at the height of the crisis of hospital mortality from infections, the filthy conditions of many hospital wards, and the extent of the danger to in-patients in the larger hospitals (Simpson, 1871:Vol II, 289-292).

According to Simpson's figures for the late 1860s, mortality from limb amputation was 10.8 per cent in private practice, compared with 41 per cent in the large hospitals (Smith, 1979: 274). Youngson makes the following, interesting assessment of Simpson's work on hospitalism:

> In concentrating a battery of worthless statistics on the relation between surgical mortality and the size of hospitals, Simpson seemed to miss the point. But in fact he made it inescapable. Without Simpson there would have been no controversy, and without the controversy the hospitals would have remained far more unhealthy places than they actually were by the last quarter of the nineteenth century (Youngson, 1979:220).

Since 1858, Simpson, along with three other public health pioneers, William Farr, Sir John Erichsen and Florence Nightingale, had proposed the demolition of the largest

hospitals, and the use of small iron huts in which patients could be isolated, with plentiful supplies of fresh air. St Thomas's hospital, Farr believed, should be broken up into small units set among areas of patient need (Smith, 1979:276). Smith quotes a supporter of Simpson as saying hospitals 'are necessary evils, good for paupers, good for medical instruction, and as fields of scientific investigation, but worse than useless as hygienic resorts' (ibid).

Into this debate came Lister, with a new theory of infection, which undermined the entire argument being put forward by the public health proponents of ventilation, lack of overcrowding, good nursing and healthy diet. Selwyn (1965) suggests this as a far more probable reason for Simpson's antipathy to Lister, than an undermining of acupressure.

It was not however, merely a case of underdetermination of theory by facts, of the ideological claims of one theory against another; Simpson also had some support for his theory from nature! During the period in which Lister developed antiseptic surgery, surgical mortality fell considerably from its peak in the 1850s and 1860s. While some historians have been inclined to put this down solely to the innovation of antisepsis, Hamilton and Lamb argue that there were almost certainly other changes in the latter half of the nineteenth century such as better nourishment which led to the improved general health of patients by enhancing resistance to infection (Hamilton and Lamb, 1982:85; Hamilton, 1982).

> Some surgeons, opposed to Lister, who were working outside Glasgow, were puzzled by their good results (without the benefit of Lister's methods), and may have had better fed patients in their care. .... there were many case reports where surgeons recommended "fortifying diets", thus suggesting that many patients were ill-nourished. In three cases, surgeons feared that the

> patient would not sustain the shock of surgery. It also explains the relative immunity of the rich patients to infection .... the result of better nutrition, not their isolation when operated on in their own homes (Hamilton and Lamb, op. cit.).

The impact of public health measures, such as sewage disposal, municipalisation of water supply, vaccination, and compulsory notification of infectious disease in this period are well-documented (for example Wohl, 1983), and are outside the ambit of this chapter. However it is worth noting that these measures articulate easily with a humoral theory of disease. Despite pragmatic experience such as the efficacy of vaccination strengthening the recognition of exterior causes of infection (initial cause), the importance of susceptibility (antecedent cause) was also recognised.

It is in this light that the antagonism to Lister, and particularly that of the public health lobbyists such as Simpson, needs to be seen. Lister's theory destroys the dialectic:

Person	+	Nature
(Antecedent)		(Initial)
(Susceptibility)		(Environment)

replacing it with a simple formulation: the ubiquity of germs.

In the case of epidemics, there was an obvious weakness in germ theory: if germs were ubiquitous, why did epidemics suddenly start, and why did not everyone suffer the disease? Humoral theory had emphasised the role of earthquakes, volcanoes, sunspots to cast up from the earth the miasmata which started epidemics. Even the option of spontaneous generation had been ruled out by germ theory.

Within surgery a more serious problem arose from the germ theory. If the infection (in humoral theory, the cohesive cause: internal to the patient) is exterior, then the implication, which as has been noted Barnes made explicit in 1874, is that the sole responsibility for infection lies, not in a patient's susceptibility, nor in the environment, but with the surgeon, her/his hands and her/his technique.

A preliminary structural analysis

There is hence a case to be made that the principal theoretical objections to Lister's antisepsis were firstly its emphasis on an exterior germ of infection, and secondly, Lister's perverse notion of cleanliness. It is suggested here that these two factors are both contrary to an underlying principle, that of Galenic humoralism. It is further suggested that such a framework for understanding opposition to Listerism is far more satisfactory than imputing such other reasons which have been suggested, for example:

1. The rivalry of London and Scottish medicine. Scotland had been extremely influential, and London surgeons could not accept yet another Scottish innovation.

2.Lister considered his technique the passport to modern surgery. Anyone without this qualification would cease to be legitimate members of the profession.

3. Lister's system worked only if adhered to precisely. Those who used it only in part were unlikely to obtain results.

4. Lister was not likeable (Youngson, 1979:190-5).

It is possible that these reasons have some grounding, but they are conjectural, and their validity depends on reconstruction of events, either by biographers or historians; what is

suggested here is that aspects of the internal structure of the theory of antisepsis themselves offer the clue as to why it was opposed. Furthermore, this internal structure can be made available by the method of structural analysis derived from social anthropology. It can then be 'tested' in the sense that its implications can be evaluated alongside those of other theories, in this case, those of humoralism and subsequently, asepsis.

The structural analysis is fairly straightforward in the light of the previous consideration of the contrary ideas about cause of surgical infection and of 'cleanliness'. These ideas of dirt and cleanliness bear a further brief consideration. Dirt, according to Douglas, is something which does not fit into a system of classification and is therefore 'matter out of place':

> Dirt is never a unique isolated event. Where there is dirt there is system. Dirt is a by-product of a systematic classification of matter, in so far as ordering involves rejecting inappropriate elements (Douglas, 1984:35).

What is categorised as dirt will be contingent upon cultural definition, thus hospitals in the early 19th century could be ordure-ridden, rat-infested places precisely because society at that time had no conception that these elements were 'dirty'.

The importance of this formulation is that it demonstrates how any disparate element, anything which does not fit a classification, is matter out of place, is 'dirt'. In the present study, we are therefore considering not only what is 'literally' dirty, but also that which is 'dirty' because in some way or other it is out of place. Given the positive value placed upon health in Victorian society and our own ('purity'), it is reasonable to assert that illness or infection, or the

causes thereof, will be negatively assessed as dangerous or 'out of place' or 'dirty' elements. In the light of this use of Douglas it is possible to ascribe positive and negative values to the elements of the different theories.

As has been shown according to humoral theory for an infection to occur, 'patient' and 'nature' must both be in a dangerous condition:

Person	+	Nature	=	Infection
(dirty)		(dirty)		(dirty)

The role of the surgeon is neutral in the equation: s/he can act professionally to either remove the susceptibility of the patient (by careful succour), or remove the dangerous miasmata (by public health measures).

However, under germ theory and antisepsis, the relation is non-dialectical:

Person	+	Environment	=	Infection
(clean)		(dirty)		(dirty)

where the surgeon is part of the environment. Indeed according to Lister, as with Semmelweiss before him, the role of the surgeon is crucial, in terms of the potential to introduce dirty matter into an otherwise clean body (Lister, 1881:372).

Furthermore, if germs are ubiquitous, nature (environment) is responsible only to the extent of being a passive medium. Hence the new equation:

Surgeon	=	Dirty
Antiseptic	=	Clean

Now this evaluation of surgeon as dirty is not problematic from **within** the theory of antisepsis. But from **outside** the theory, in the wider context of medical practice or of society itself, it is likely to cause negative responses. To understand how this can be it is useful to consider how meanings are ascribed to elements of a discourse.

Within any language community certain terms, for instance 'responsibility', will have a shared meaning. These are achieved partly by noting the differences between elements: 'responsibility' is understood because it is different from 'duty' or 'obligation' or 'commitment'. However, the elements of a scientific theory, as Manier has suggested (1980:21), are an internally coherent network, in which each term's meaning may be contingent only upon the other elements of the net, and not upon meanings in the wider language community. While the conclusions of that theory may be internally coherent within the confines of the theory's structure, they may have disturbing consequences in the wider community of shared meaning. In the wider language community, antiseptic theory thus had the consequence of equating a highly valued element in society, a healer, with pollution rather than purity. Such a mis-classification would be highly distressing, and the result could be the rejection of the healers themselves as ambiguous, as 'matter out of place'. This formulation is sufficient to indicate that the ideas behind germ theory are unlikely to be good to think about by surgeons, who would thereby be equated to dirt.

This argument will work at the level of 'interests', clearly it is unsatisfactory to one's professional standing to be matter out of place. But it also works at another level, of interest to the sociologist of scientific knowledge as well as the historian, which argues that it is the classification of people, in this case surgeons and patients , which will determine the classification of things - for instance miasmata,

contagions, germs - but not by dint of personal power, but in respect of the ideological structure of a culture which requires them to be clean, the opponents of pollution, dirt, and infection. Rather than, as suggested above, a theory's unfortunate consequence (in this case equating surgeons with dirt) leading to the abomination of a familiar element of a culture (surgeons), the theory is itself abominated - rejected.

The advantages of this formulation are two-fold. Firstly, it takes the theoretical arguments for antisepsis, and derives from their **intrinsic** logical structure an explanation for its distastefulness. Secondly, it does not disparage Lister's peers as more motivated by personal advance, or less scientific than we today, who can so easily see 'the truth': it is not a whig history of scientific innovation. That Lister was unpersonable, a Scot, that his system required minute attention to detail, and implicated non-adherents as un-professional now come to be seen as 'reasons', derived subsequently by historians to understand apparently illogical behaviour on the part of the community of surgeons.

However, that is not the end of the story, for of course the rejection of antisepsis was temporally accompanied by the innovation of asepsis, the prevention of putrefaction by securing the absence of infective agents, as opposed to their destruction by antiseptic agents applied to a surgical wound. If the analysis of the opposition to antisepsis is valid, then the **same analysis** should explain the acceptance of asepsis.

Humouring Lord Lister: the triumph of asepsis

A modern explication of the principles of asepsis in surgery would dwell on the origin of infective agencies in the environment or in septic matter, in other words, the principle would acknowledge a germ theory of infection. A proposition of

spontaneous generation would be considered inappropriate to aseptic practices - if the agents of infection were the result of an interior principle of suppuration, sterility would be irrelevant. However, it has been demonstrated above that the claim that germ theory had generally been accepted in surgical circles by the 1880s, at the time that asepsis was being innovated, is unsound. Public health measures outside surgery, which articulated easily with humoral theories of disease were advancing, but as Wohl notes, local authorities did not respond with the same vigour to germ theory in the 1880s as they had to the pythogenic (miasmatic) theory thirty years previously (Wohl, 1983:140). Even as late as 1894, the epidemiologist Creighton was pursuing a strictly humoralist (in the sense of emphasising the dialectic between environment and patient susceptibility) explanation of epidemics:

> In seeking for the source of such an infectious principle, we are not to look for previous causes of identical disease, but for something else of which it had been an emanation or derivation or equivalent, something which may have amounted to no more than a disparity of physical condition or a difference of race. And as the countries of the globe present now and formerly the contacts of civilized and barbarous, nomad and settled, rude and refined, antiquated and modern, with the aboriginal varieties of race, it may be said, in this theory of infection that mere juxtaposition has its risks (Creighton, 1894 [1965]:433).

Creighton's theoretical commitment was to tellurism, a version of miasmatic theory which implicated earthquakes and other natural phenomena as the initial cause of epidemics. So even at the end of the century it was possible to hold theories of infection other than germ theory. This is not to suggest that antisepsis had not made inroads into medical practice, but only

to question the assumption that its final success was inevitable, due to sheer weight of 'factual' evidence. In the realm of surgery, it is suggested, resistance to germ theory was resolved not by refining antiseptic methods but by a theoretical subversion. Asepsis, contrary to the 'modern' assessment, was not based on a germ theory at all. Indeed, it creates a silence over germ theory, and implicitly restates a humoral theory of infection.

The surgical ritual

A myth that must be exploded is that asepsis was the historical successor to Listerian antisepsis. Rather, it was a parallel innovation; while Lister was struggling against collegial resistance to antisepsis, practices which came to known as aseptic were already being introduced. The first aseptic innovator was Lister's own junior surgical colleague at the Glasgow Royal Infirmary, William MacEwen. Within years of the first paper on antisepsis, and reputedly to the mockery of his colleagues, including Lister, MacEwen discarded the frock-coat in favour of a sterilizable white apron (Bowman, 1942:61).

In the light of the contextualisation of the adoption of aseptic clothing which has been developed above, it is now appropriate to consider the innovation of these garments, which occurred unevenly, over the four decades following MacEwen's example. Unfortunately for the historical analysis of this innovation, in comparison to the opposition to antiseptic practice and germ theory, this new innovative practice of asepsis appears to have been non-controversial, to the extent that it did not elicit any great discourse in the same medical journals which had been so scathing of Listerism. This silence, has the effect of making any real history of asepsis difficult to piece together, and the following short history of aseptic

practices derived from those records of aseptic innovation which exist is no doubt far from complete.

Gloves

Gloves were adopted in the first instance as a means of protection against the irritating antiseptic chemicals used in operations. Halsted is generally regarded as the first, in 1878, to permit the use of gloves in the operating room, not while operating or assisting, but to prevent inflammation of his nurse's hands by the mercuric chloride antiseptic used to sterilise instruments. His successor, Bloodgood, was the first to use them while operating,in 1893, at the John Hopkins University Hospital (Mitchell, 1945:902; Fisher, 1977:275).

A photograph in MacCormack's 1880 Antiseptic Surgery shows an operator with bare hands (MacCormack, 1880:165). Gloves are not mentioned in Gerster's surgical text of 1888: hands are to be scrubbed with soap, and then rinsed in antiseptic (Gerster, 1888:19). Gloves are not mentioned in Schimmelbusch's text of 1895. A column in 1914, in the newly published British Journal of Surgery, describing eminent surgeons' techniques, noted that Professor Garre of Bonn wore gloves only in septic cases (British Journal of Surgery, 1914b:696), although Bland Sutton was noted to wear boiled gloves (British Journal of Surgery, 1915a:111). An ambiguity surrounding the gloves' use is notable in Bidwell:

> When doing any operation, it is certainly advisable to wear rubber gloves, on account of the practical impossibility of completely sterilizing the hands. Again the use of rubber gloves prevents any risk of the surgeon's own hand becoming infected, and so carrying infection to another case (Bidwell, 1912:14).

Subsequently, gloves were to become adopted to protect the patient, rather than the surgeon (Mitchell, 1945:902). Returning to the present, the current received knowledge on the necessity of gloving is noted in a report of the Infection Control Nurses Association: 'in surgical procedures, especially where sterile materials are handled, and it is difficult to remove or reduce substantially the resident flora of the skin ... Sterile gloves should not be used to protect the wearer from ... potentially infectious material'(Ayton et al., 1984:B2; B6).

Gowns

It has been noted that Macewen's white gown was the first aseptic item of dress to be worn during surgery. It was to become popular rapidly with the surgical profession. The German surgeon Von Neuber was probably the first to boil his gown, in 1883 (Fisher, 1977:275). Street clothes were acceptable to MacCormack in 1880, but Gerster advocated aprons eight years later (Gerster, 1888:19). Lockwood remarked in 1896 that in his operating theatre:

> The surgeon and his assistants remove their coats, turn up their shirt sleeves, and put on aprons to protect them from the jets of blood or the splashing of lotions ... The apron, having not been sterilized, must never be touched with the disinfected hands (Lockwood, 1896:162).

Surgeons operating in all-encompassing suits 'of some light material' are illustrated in Beck's text of 1895 (Beck, 1895:facing 241). At Bland Sutton's theatre 'Visitors are allowed in the theatre galleries without gown or overshoes, but those privileged to walk about on the floor must wear a sterile gown' (British Journal of Surgery, 1915a:111). In Vienna also,

'all who take part in the operation wear sterilized gowns' at Von Eisenberg's clinic (British Journal of Surgery, 1915b:329).

While sterile gowns became ubiquitous, controversy remains. A report in 1984 noted that woven fabric gowns were 'not barriers to dispersal or penetration by moisture or bacteria' (Ayton et al., 1984:A6)

Masks

The surgical texts are most silent over the innovation of face masks. Perhaps this is appropriate. Indeed at Sir Victor Horsley's operations 'loud talking and coughing were strictly forbidden, great stress being laid on the danger of wound infection by contamination in this way' (British Journal of Surgery 1914a:515). The issue of contamination by breath was clearly debated in surgical circles. Schimmelbusch, in 1894, stated:

> There is among doctors as well as among the laity, a widely prevalent belief that expired air is poisonous, and the fables which formerly endowed monsters with a poisonous breath that destroyed everything that it encountered is a striking example ... many investigations have been undertaken and these have unanimously resulted in showing that instead of fission fungi being given off from the respiratory tract, they are taken up ... expired air can only become a vehicle for germs if sputum, mucous secretions, or even particles of tissue were coughed out with them (Schimmelbusch, 1894:11).

Unfortunately these studies are not referenced.[3] Castenada notes (1961:423) that masks were mentioned in passing by the Polish surgeon Mikuliez-Radecki in 1897. In 1905, according to

Fletcher, a mask was advocated by a British surgeon to counteract droplet infection while talking. Oral sepsis or nasal cattarrh were indicators for the use of a mask in 1911 (Fletcher, 1977:19-20). Bidwell suggested that masks, in the form of a 'gauze veil' should be worn when operators suffered from catarrh or carious teeth (Bidwell, 1912:282). Garre did not wear a face mask 'although operating room techniques are mainly on the orthodox aseptic plan' (British Journal of Surgery, 1914b:696). Nor did Bland Sutton use a mask at the Middlesex hospital in 1915 (British Journal of Surgery, 1915a:110). In the same year it was reported that at Watson Cheyne's clinic:

> Masks for the nose and mouth are worn by all in the immediate vicinity of the operating table, but long before their introduction into surgery Sir Watson had imposed an "area of silence" around the patient, and had established a code of grunts by which his needs were communicated to his assistants' (British Journal of Surgery, 1915c:325).

Although masks were universally adopted by the 1920s (Fletcher, 1977:20), controversy continues. Ritter et al recently concluded that 'masks most definitely altered the projective effect introduced by talking and breathing' (Ritter et al., 1975:50). However other studies indicate masks had no effect on reducing infection during operation wound dressing (Collins and Bibby, 1981:18), or during operations (Mitchell, 1981; Orr, 1981:390-1). An informant told the researcher that recently masks were abandoned at a nearby maternity unit as a result of parent pressure to demedicalise childbirth. (Field Notes 21/5/7/9)

Why was asepsis innovated?

While these innovations were proceeding, Lister was far from silent. Having fought so hard to innovate antisepsis, he now found himself in the rearguard in opposing its subversion by asepsis. With his subordinate MacEwen adopting clean operating dress, and substituting boiling water for carbolic as means of sterilizing his instruments (Bowman, 1942:61-2), Lister repeatedly rejected these measures as irrelevant. Thompson, Lister's house surgeon, recalls with pride that Lister never wore a gown, though he might sometimes pin a towel across his chest. His own garb consisted of an old blue frock coat which previously he had worn for years in the dissecting room:

> It was stiff and glazed with blood. Yet our cases healed as rapidly and as smoothly as they do with all the ceremonial and ritual of sterilisation and asepsis nowadays (Thompson 1927:779).[4]

The expression 'The ritual of the surgical operation' came into being in the 1870s, as a result of Macewen's innovation, soon to be copied. It was a pejorative term, used by some, including Lister, as an argument against asepsis. Lister argued that the institutional arrangements needed for surgery under aseptic practice turned it into a pursuit possible only in well-equipped and designated accommodation in hospitals (Stern, 1941:199). Cameron, one of Lister associates, echoed this sentiment twelve years later:

> Precautions are taken as regards architectural and mechanical arrangements, the amount of skilled assistance required, and the use of masks, gloves and other accessories, all of which are in their entirety quite incompatible with ordinary practice (Cameron, 1907:62).

Some forty years on, Lister was still adamant:

> It has grieved me to learn that many surgeons have been led to substitute needlessly protracted and complicated measures for means as simple and efficient [as antiseptics] (Lister, 1908, Vol II:370).

These are legitimate comments: hospital care in the nineteenth century was low status, being for the poor; private practice was normally conducted in the homes of the rich. The new technologies of creating aseptic surroundings, which included the use of sunlight, electricity, heat, steam, mechanical cleaning, dryness, and boiling water and aseptic garbing such as operating suits, caps, and trimmed beards (Beck, 1895:61), were decidedly inconvenient for non-hospital based surgery. On this basis the relatively simple antiseptic techniques would be far more adaptable to non-hospital practice.

It is difficult to see how innovating asepsis could be due simply to professional closure. Antiseptic practices and anaesthesia were in themselves sufficiently specific to separate surgery from the practices of other healing specialties. The explanation for the rise of asepsis must therefore be sought elsewhere, within the **structure** of the theory of asepsis. Lister's notions of dirt and cleanliness, it has been noted, did not tally with those in currency in Victorian society; although Lister saw nothing contradictory between dirt and sterility, this was a contradiction which many others found disturbing. It is suggested that the brief history of aseptic clothing recounted above demonstrates how asepsis re-connected popular ideas of cleanliness with the notion of surgical sterility, by innovating practices commonly associated with 'cleanliness'.

Lockwood comments that in his opinion 'standards of cleanliness in Britain being so high, it is unnecessary for me to go into specific directions for preparation for operating' (Lockwood, 1896:166). While being one further silence over these matters, it is a revealing silence, for it indicates that sterility was to be seen as a straightforward form of cleanliness, independent of any specific reference to a theory of germs, and contrary to the Listerian notion of antiseptic cleanliness. In the early stages of the innovation, these garbing practices were adopted even when no actual sterilisation in the technical sense was employed, as for example, in the case of Lockwood's gown.

The new techniques of sterility and garbing may have been inconvenient, but as Bland Sutton's recalled in his comparison of antiseptic and aseptic environments:

> Operating theatres which resembled a **shambles** in 1860 are replaced by rooms of **spotless purity** containing scintillating metal furniture and ingenious electric lights. All concerned in the operation are clothed from nose-tip to toe-tip in sterilised linen gowns, and their hands covered with sterilised rubber gloves (Bland Sutton, 1927:781, my emphasis).

Bland Sutton's opposition

'shambles' vs 'spotless purity'

articulates just those notions of dirt (matter out of place) and cleanliness, purity and pollution, which it has been shown were so important to the Victorian world-view on matters moral as well as medical. The personnel in Bland Sutton's aseptic theatre, sterile from nose to toe, are firmly on the side of purity. This role for the aseptic surgical personnel is further

extended in Beck's (1895) discourse:

> Instead of trying to kill microbes brought into contact with a wound, the endeavour is now to keep the wound free of microbes without employing so-called "germicidal" agents.

Aseptic method, he continues, is by its nature **prophylactic** (Beck, 1895:61). The surgeon and her/his team are there to make the profane pure, by the prevention of danger assuring the continuing cleanliness of the patient despite the threat from a harmful Nature. The surgeon acts as proxy for the patient's susceptibility to infection.

In this reading asepsis is innovatory only in practice, not in theory, it is nothing more than a return to humoralism, and a silencing of the germ theory of infection. (By this I mean that while germ theory may be implicit to aseptic theory and practices, it is not spoken of, for to do so would be to distort the structure of the underlying dialectic.) Asepsis entailed a re-rendering of the separation between initial and antecedent causes of disease which antisepsis collapsed. Such a rendering was made explicit in a 1905 text, Vallack's 'Principles and practice of asepsis':

> It cannot be too strongly insisted upon that the healing of every wound and the recovery of every sick person are due to the reparative power of the tissues alone. The surgeon and the physician are not the agencies whereby recovery is brought about; their function is to aid, when able, the tissues in their struggle. The vast majority of micro-organisms are quite unable to attack living tissue .... (but) a multitude of organisms can overcome tissue when resistance is low (Vallack, 1905:4).

Vallack records the general causes of lowered resistance as (1) disease, (2) starvation and bad diet, (3) cold. Returning to themes which have been noted as those dominating the public health approach, he continues:

> Starvation, either by reason of quantity or quality of food, **obviously** lowers tissue resistance, as do also bad ventilation, overcrowding and bad sanitary conditions. Often it is necessary to place a patient on good diet, and in healthy surroundings .... before operating. .... To maintain the vitality of the tissues is as much a part of asepsis as to diminish the number of germs which enter a wound (ibid:6, my emphasis).

This is a straightforward exposition of the Galenic dialectic between antecedent cause (susceptibility), and initial cause (infective agent). The surgeon is as much concerned to increase what would nowadays be called immune response, as to carry out successful and germ-free surgery.[5] Asepsis is far more than a set of practices to create the kind of surgical cleanliness envisaged by Lister, it is a theory of the person, of her/his relationship to Nature, and of the surgeon's role in mediating that relationship during the dangerous process of surgery. And by 1905 the elements of this theory, derived from public health as much as from germ theory, were 'obvious' to surgeons such as Vallack.

It is now possible to compare the structures of the theories behind antisepsis and asepsis, in the light of the primary source material, and to assess the meanings which each would hold for the involved actors.

A structuralist analysis of asepsis

Four main themes have been established in the structure of antiseptic theory:

1. Antiseptic theory ran contrary to humoral theories in that it collapsed initial and antecedent causes into a single non-dialectical cause (germs).

2. Antiseptic practice did not require common cleanliness, according to its proponents.

3. The public health movement led by Simpson, Farr and Nightingale depended upon a dialectical understanding of the relationship between patient and environment.

4. Antiseptic theory had the effect of equating surgeons with pollution.

Asepsis, alternatively, displays these themes:

1. Aseptic theory is a version of humoral theory, in which the susceptibility of the patient (antecedent) to environmental contagion (initial cause) is obviated by surgical precautionary intervention.

2.Aseptic practice articulated with ideas of common cleanliness.

3. Aseptic practices fit into a general public health approach to hospital conditions, ventilation, and avoidance of cross-infection by prophylactic measures.

4. Aseptic theory equates the surgeon with purity.

Recalling the formulation used earlier in this paper, in traditional humoral theory, for an infection to occur, both 'human' and 'nature' must be in a dangerous condition:

Human	+	Nature	=	Infection
(dirty)	+	(dirty)	=	(dirty)

The surgeon acts to remove either patient susceptibility or danger in the environment.

Antiseptic theory displays a non-dialectical relation:

Patient	+	Environment	=	Infection
(clean)	+	(dirty)	=	(dirty)

The surgeon, as part of the environment is polluting, antiseptics purify an otherwise polluting influence.

Aseptic theory displays a new version of the humoral dialectic

Patient	+	Environment	=	No infection
(clean)	+	(clean)	=	(clean)

The surgeon now possesses a potentially ambiguous status. On one hand s/he is part of the environment, and so potentially polluting. But via the technology of asepsis s/he stands outside nature: through the ingenuity of human culture s/he can purify the pollutant.

Nature vs Culture

Polluting Body vs Purifying Surgeon

Discussion

The purpose of surgical garb is now clear; it is to literally **mask** the natural polluting body, and enhance the purifying agency of surgical culture. The surgeon is a catalyst, a facilitator, her/himself outside nature, able to turn pollution to purity. Culture acts on Nature, and denies Nature the possibility of taking control. The power of the surgeon is enhanced, by denial of Nature, and the exaltation of the ability of Culture safely, and without pollution, to move a patient from one social categorisation to a new superior status. Through surgical culture, the operating theatre becomes a limbo within which social status may change, without ingress during the transition or liminal phase (Turner, 1968:79) of any dangerous influence.

The analysis in this chapter has led to a radical departure from the standard history of surgical sterility, in which Listerism was refined and enhanced to become the system of aseptic surgery we have today. The scrutiny conducted in this chapter has demonstrated that whereas antiseptic theory aroused immediate and concerted opposition, no such opposition faced the second innovation, of aseptic theory. Furthermore, it is insufficient to assert that the second was merely a corruption or development of the first. On the contrary, the evidence gathered from primary sources indicates an important discontinuity between the two approaches.

While antisepsis was articulated around germ theory, and requires the postulation of the ubiquity of microbes, asepsis denied this ubiquity, indeed it was upon the ability to exclude from the operation the possibility of infection that the approach rested. With germs excluded, they play no part in the discourse, and it is the proposition of this paper that it is

the silencing of this element which permitted the acceptance of aseptic theory by the profession, while antisepsis foundered.

What are the consequences of silence over germs? Firstly, as has been seen, antiseptic theory had the unfortunate effect of identifying the surgeon with the rest of the patient's environment, firmly on the side of Nature. The patient, as representing humanity, is the other pole of the duality - Culture. But it is not a duality of equality, in this equation Culture is always exalted over its negative pole. The surgeon is hence, as part of Nature, in the role of polluter, cast down from the superior pole of Culture. It is only by the use of antiseptic chemicals that the polluting Nature may be made pure.

While antiseptic practice created, by its emphasis on germs as infective agents, a network in which the surgeon could only be implicated as polluter, asepsis - in silencing by exclusion the element of the discourse which had this effect (germs) - remade the network. Now the surgeon is arbiter over the struggle between Culture (the patient) and Nature (the environment). By manipulation of the environment, the surgeon ensures the exaltation of Culture over Nature; s/he is the agency by which a dangerous Nature is made pure. Clothed in sterile garb, the surgeon's body, while implicitly recognised as part of Nature, is masked and shielded from the equation. This is the ritual of the surgical operation.

Secondly, and importantly for the approach adopted throughout this study, of considering actors as active, purposive human agents making sense of the world through their activities, it has been demonstrated that opposition to Listerism was not thoughtless Luddism by a group of conservative bigots within the medical profession, but a reasoned and coherent response from a grouping developing a radical approach to health,

through the religio-moral and epidemiological premises of the public health movement. This approach was contextual to the crisis of the industrial cities of the mid-nineteenth century, and within two generations had achieved massive reform in public health (Wohl, 1983:3). The significance of this re-evaluation is pursued more fully in Fox (1988).

Conclusion

In the last chapter, it was demonstrated how the movements involved in the enterprise of surgery articulated about a notion of hygiene, and it was suggested that by hygiene more was meant than simply the absence of infective agencies, but a more general promotion and protection of health ('Hygiene^2). The circuits of hygiene ensured that this protection was fulfilled and sustained throughout the dangerous period during the operation, when boundaries are transgressed.

It was logical, therefore, to turn to the practices of sterility, which encapsulate these safety precautions. Having described the theory, observed practical anomalies needed to be explained. Here, observation and use of informants proved insufficient - the practices were too deeply embedded in a culture of scientific rationalisation. So instead, this historical digression approached an understanding of the significance of sterile practices from a different angle, by grasping how the techniques had been developed and legitimated. The analysis turned up some unexpected conclusions about the inter-relation of humoralism, antisepsis and asepsis, but most importantly an understanding of the relations between surgeon, patient and nature under the preferred sterile practice of asepsis.

Asepsis imposes a cultural definition of purity of surgeon over the biological/natural definition of pollution. It enables the surgeon to extend her/his power, as sanctioned healer, to encompass the patient, and move her/him safely from one social status to a new superior one.

By adopting aseptic theory and practice, surgery has drawn upon ideas of purity which are culturally powerful in defining the status of its object - the patient. As adjunct to the actual reconstruction which occurs in surgery, performing the ritual of asepsis demonstrates that a social status change has occurred. The ambivalence toward certain aseptic practices concerning garb by some surgical actors may now be understood. Adherence to the letter of aseptic practice legitimates what is the 'success' of the operation in transforming a patient. At the same time, scientific doubts over the value of sterile garb are discussed and debated. Unlike Lister's era, germ theory is now universally accepted. So the ritualism of asepsis is opposed to standards of 'scientific rationality'. Consequently, the rules of asepsis are distorted subtlely or blatantly by actors, who rationalise their activities, creating a new silence over the significance of surgical sterile garb.

CHAPTER 5: SURGEONS AND ANAESTHETISTS

Introduction

In Chapter 3, data based upon field observations and informants' comments led to the definition of particular movements of staff, patients and instruments: these were designated the Circuits of Hygiene. These circuits form a set of barriers and rules which are organised to protect the patients and staff as they pass through the OT, by ensuring purity and avoiding pollution. It was suggested that these circuits not only ensure hygiene in the narrow sense of cleanliness (Hygiene^1), but also enhance the promotion of health in structuring the passage of a patient from an unhealthy to a more healthy (and therefore 'better') status (Hygiene^2.)

To develop this dual notion of hygiene, as concerned not only with the 'practicalities' of purification but also the moral order by which healing enhances patient status, the last chapter considered the historical roots of sterile practices. It was shown that sterile procedures in the form of asepsis had a number of consequences at this 'moral' level. Surgical garb and techniques of asepsis mask the polluting natural body of the surgeon, who through the ingenuity of human culture becomes an agent whereby purity is imposed upon the natural world. Aseptic sterility is thus not only a practical technique but a demonstration of the superiority of culture over nature. From a sociological, as opposed to a physiological, point of view the power of asepsis thus lies in its ability to enhance the assessment of surgical healing, the imposition of culture upon nature, as positive and valuable. A first step in deciphering the social structure of surgery has thus been achieved by looking at the 'langue' as opposed to the 'parole' of asepsis.

This methodological use of the historical was necessitated by the very 'obviousness' of the purpose of sterile technique, and the consequent silence over any effect other than bacteriological. Fortunately, informants were more willing to offer explanations of other aspects of the social structure of surgery. Having looked at two details of surgery which define it as a unique form of healing - the highly bounded locale and the use of sterile technique - this chapter considers the other distinctive feature, anaesthesia, and the relationship between surgeons and anaesthetic personnel in the OT and beyond. It will consider how the division of labour in the OT between these two specialties provides surgery with distinctive and powerful structural aspects, and refines the emerging notion of surgery as 'status passage', which will be dealt with explicitly and theoretically in the next chapter.

The researcher had the good fortune to be able to observe procedures surrounding anaesthesia most closely, as many of the key informants in the study were anaesthetists. There is a sense in which the watchfulness of the anaesthetist during surgical procedures makes her/him a kind of 'naive or native anthropologist'[1], and perhaps it is for this reason that they were so useful as informants. As will be seen, the key concept which will be derived in this chapter was in fact first remarked upon by one of the informants, Dr J, although its significance was at the time not fully appreciated. This congruence between actors' and analytic concepts is reassuring. However, it must be emphasised that, as elsewhere in this study, informants' accounts are seen more as 'displays' than as direct sources of data about structure. The analysis derives from a multitude of sources, from informants and from observation. The more extreme claims of informants must therefore be treated with considerable caution.

Division of labour in the OT

Within the operating theatre, the two clinical specialties of surgeon and anaesthetist come into contact. The different phases of patient passage through the OT have been described in Chapter 3, and the interactions with anaesthetists and surgeons noted. However, the interaction between these categories of clinician have not been spelt out. From a sociological point of view it is to be expected that the groups would organise themselves around particular divisions of labour which would enhance their professional roles, and achieve a degree of closure. It is therefore reasonable to begin with a description of some observations made of the rules of division of labour within the OT.

1. The division of labour between anaesthetist and surgeon defines and is defined by, certain spatial arrangements in the OT. As noted in Chapter 3, anaesthetists and surgeons have different methods of ingress to the theatre, the anaesthetist through the anaesthetic room, the surgeon through the scrub area.

2. The patient's head will normally be the domain of the anaesthetist. The anaesthetic trolley is positioned so that gaseous anaesthetics may be accessed to the face mask; all connections to pulse, respiration and electrocardiograph (ECG) monitors are routed under the head pillow. Often a wall of sterile towelling will be erected to separate the operation site from the domain of the anaesthetist. It may also serve, if a patient is not under general anaesthesia, to prevent possible intervention by the patient.

> A patient was to have needle marks removed from her forearm by means of a high-speed drill attachment which scoured the superficial layers of skin. This procedure was done using a local anaesthetic. The patient was extremely

> distressed by the noise and (non-painful) sensation of contact with the instrument. She was prevented from seeing the procedure by means of a wall of towelling between the operation site and her head, the anaesthetic team talked to her during the short procedure to distract her from the operation. (Field Notes 19/2/7/6)

Where the surgeon requires access to the head of the patient conflict of interests may arise. For example, during a bronchoscopy, general anaesthesia cannot be provided by gaseous agents. In this situation, the surgeon's right to access may affect the strict division of labour. For more discussion of these aberrant cases, see the section below on Conflict.

3. The instrumentation is the province of the anaesthetist, and the surgeon may not comment on the readings (see 4 below), indeed is assumed not to be able to decipher them. As an anaesthetist informant put it, rather bluntly:

> 'The surgeon is a technical person trained to do carpentry, with some background knowledge of how the system works. At some point there is a need for the technical knowledge of the anaesthetist; it's a technical field with use of equipment which anaesthetists understand because of their interest. Surgeons do not understand the machinery. (Interview with Dr J 29/1/7/3)

Anaesthetists will make decisions based on their technical knowledge:

> We are applied physiologists and pharmacologists as well as physicians. (ibid/11)

This assumed technical superiority of anaesthetists is one way that closure is achieved in the OT.

> Historically anaesthesia started as a 'Cinderella' specialty, it was not regarded as prestigious, but as a joke. There was no training, and was therefore not attractive to join. But anaesthetists have realised the value of their skill, and have made sure they have been able to communicate it to other people. They have put training high up in priorities. (ibid/8-9)

The anaesthetist will inform the surgeon if any monitor indicates deviation from a norm, for instance low blood pressure. The anaesthetist in effect 'interprets' the technical data for the benefit of the surgeon, who is then expected to act upon it.

4. Similarly a surgeon will inform the anaesthetist if a complication has arisen, for instance a bleed or an expectation of lengthened operation duration. In both interactions the recipient in the communication is allowed to 'diagnose' from the 'symptom' reported to her/him.

> During a major vascular procedure a surgeon Mr M commented to the anaesthetist 'I'm afraid there is rather a lot of blood in here'. The anaesthetist immediately 'wrote up' a further two units of plasma and sent his assistant to collect them from the blood bank. (Field Notes 17/2/7/5)

5. Social interaction occurs within surgical and anaesthetic teams, but rarely between teams. Even when surgeons and anaesthetists are well-known to each other, little association occurs, conversation often being limited to technical queries and information. Anaesthetists may occasionally move so they can watch the surgical procedure but when seeking a good vantage point are not accorded any right of seniority by more junior members of the surgical team. They do not make any comments on the state of surgical activity. (Field Notes

17/2/7/4; 3/3/7/5) Outside the theatre, anaesthetists and surgeons were observed to interact freely.

6. As described in Chapter 3, the surgeon will control proceedings only for the period of the operation itself. The beginning of this period is usually defined by the transfer of the patient to the table. The surgeon may give instructions how the patient is to be positioned and prepared, and the anaesthetic team will carry out these instructions. The end of the period is defined by the completion of wound dressing. Outside this period, responsibility for the patient lies with the anaesthetist.

These rules governing the division of labour in the OT appear to ensure the smooth passage of the patient. No observations indicated that there was any ambiguity over the definition of these boundaries of responsibility; they did however permit consultation between surgeon and anaesthetist at the limina.

> In neurosurgery, positioning of the patient on the operating table, and attachment of head clamps to prevent movement occurred within the anaesthetic room. This allowed discussion between surgeon and anaesthetist of the forthcoming procedure. (Field Notes 24/2/7/1,5)

In this particular instance important information about the history of the patient, expectations for the coming operation and possible complications was routinely communicated. Neurosurgery is a sub-specialty in which uncertainty, both of diagnosis and prognosis will tend to be high, and this may start to explain the level of interaction between surgeon and anaesthetist, although a further explanation is offered below. In general, surgeon/anaesthetist interaction was a source of interest to the researcher precisely because the encounter appeared to be carried off so successfully despite minimal actual communication. Dr J suggested that this could largely be

put down to 'experience', by which both parties learn how much input from each is needed for particular procedures (Interview 29/1/7/4). However, this does not explain satisfactorily the variations which were observed by the researcher.

Katz has suggested that definition of boundaries within the OT enhances autonomy of participants (Katz 1984:347). The highly stylized courtesy of surgeon/anaesthetist interaction is also reminiscent of Strong's description of mother/physician interaction (Strong 1978) which he argued enabled participants to carry off a successful encounter despite their unequal status, but equally legitimate rights over the patient-object. To develop this analogy, it would therefore be reasonable to suggest that the surgeon and the anaesthetist hold differing, though equally legitimate definitions of the patient. It is to this proposition that this chapter will now address itself. In order to understand the processes which affect this definition it is worthwhile to briefly describe the techniques which are employed to achieve pain relief and/or unconsciousness.

Techniques of anaesthesia

Two differing objectives apply in the use of anaesthetic agents in the OT. The first, the removal of sensation from a part of the body to be subjected to surgery may be termed true anaesthesia. The second, the prevention of pain both during and after operation, that is analgesia, obviously has much in common with the first category.[2] The techniques of achieving these two objectives may however differ. Analgesics will normally be administered by means of injection of agent, either locally, or by means of a 'block', the prevention of sensation distally by the use of anaesthetic agent to interrupt the transmission of nervous impulses by a nerve or nerve plexus between the area to be de-sensitised and the central nervous system. The most common blocks are brachial (upper limb), femoral (lower limb) and spinal and epidural blocks (roughly

below the level of the injection, for abdominal and occasionally thoracic procedures.) These will last longer than general anaesthetics, and are used where a high level of pain control after operation is required.

General anaesthetics provide a degree of analgesia, but are principally used to achieve unconsciousness. Formerly, general anaesthetics were also employed to remove muscle tone, without which abdominal surgery is impossible. Since the 1940s, agents such as curare have been used as muscle relaxants, permitting lower and thus safer levels of anaesthesia. The level of anaesthesia achieved must therefore be carefully monitored, to ensure analgesia and unconsciousness throughout the surgical procedure, as a curarised patient would (while being artificially respirated) be unable to indicate a return of sensation (Hewer 1953; Mushin 1948; Churchill-Davidson 1984). General anaesthesia will usually be induced in patients by means of an intravenous agent, it will then be sustained by gaseous agents. Post-operative analgesia is limited, and once in recovery patients may require pain control.

It is thus the case that anaesthetists have considerable opportunities to make decisions about the type of anaesthetic agent to be used in a particular surgical circumstance. Their technical knowledge alluded to above will be employed to ensure that, in their opinion, an appropriate method of anaesthesia is utilised. This decision will in general be based on three criteria:

1. The nature of the surgical procedure.

2. The physiological status and history of the surgical subject.

3. The social circumstances of the surgical subject.[3]

The anaesthetist will thus seek to make a clinical judgement about the patient based on assessment of these criteria. The consequences of these judgements for the relations between anaesthetist and surgeon will now be considered.

The Anaesthetist's Decision

The decision to admit a patient for a particular elective surgical procedure will be taken by a surgeon in out-patient clinic, based on clinical judgement of diagnosis and prognosis, severity of condition and history. Patients will therefore be admitted for surgery principally on an assessment of the particular problem presenting.

> We (surgeons) make up the list. The admissions department will pull patients off a waiting list, which has been vetted by me to ensure that it contains patients which are suitable. (Interview with Mr P 4/1/8/2)

Decisions over what kind of anaesthesia to employ will be taken at a later stage, usually only after the patient has been admitted. This in itself may be a source of tension between the specialties, as will be seen. For any surgical procedure, there will be ground rules which define appropriate anaesthetic technique, such that a range of procedures would be conducted under general, and others under blocks etc. (category 1 above). However, the physiology and social circumstances of particular patients may necessitate deviation from these ground rules, and it is in these areas, (categories 2 and 3) that anaesthetists claim their right to exercise control over patient passage through surgery.

Informants provided the researcher with many examples of how these deviations are assessed. For example, young patients are often intractable during surgery except under general anaesthesia; patients over 70 years have increased risk of

cardiac or respiratory complications and may be considered unsuitable cases for general anaesthetics. Decisions as to what anaesthetic is to be employed in these cases are made by an anaesthetist, usually as a result of a visit to the ward the evening previous to surgery. Consultation with the patient's consultant surgeon, who from experience will know a good deal about the kind of patient who may require non-standard anaesthesia, may also have taken place, as may other interventions.

> A patient Mr H who had been called for surgery for inguinal hernia and fistula was informed by a housedoctor, on admission, that he might have to have his operation under spinal anaesthesia, a possibility he confided to the researcher he anticipated with considerable anxiety. Two conflicting pieces of information were contributing to uncertainty: a history of ischaemic heart disease (IHD) had led to his GP suggesting he was unsuitable for general anaesthetic, while a consultant anaesthetist six years previously had used a general, and no further IHD symptoms had subsequently presented. The final decision was to be made by a consultant anaesthetist who was to visit the patient and take a history and examination later in the evening before the operation. (Field Notes 25/9/6/2)

There is also considerable leeway within the main categories of anaesthesia for anaesthetists to 'tailor' agents to particular patients. For example, a record of which agents were used during surgery is made, and in subsequent procedures a different agent will be employed, as this will reduce the likelihood of respiratory irritation, allergy or other complications.

> Dr J:'If a patient has had a previous operation, then we will usually use a different anaesthetic agent to that used the last time. They all have slightly different side-

effects and this reduces the risk of idiosyncratic response.' (Field Notes 12/2/7/3)

Social circumstances also affect choice of agent, principally in relation to recovery from anaesthesia. Patients who can be made comfortable at home, or have familial commitments may be selected for blocks more readily. For further discussion of recovery see Chapter 8.

These 'niceties' of anaesthetic technique may be seen as part of the professional closure which enhances the anaesthetist's status in the OT. Even when no particular history or social circumstance indicates non-standard anaesthesia, it was observed that particular anaesthetists favour certain agents, or like to use non-standard equipment during certain surgical procedures. (Field notes 17/2/7/2; 3/3/7/2) They are also inveterate innovators, taking advantage of offers by commercial drug companies to test new agents or equipment. (Field Notes 5/2/7/1; 17/2/7/4)

The data presented thus far, however appropriate to analysis in terms of professional closure, is also suggestive of an interaction in which the participants are presenting different but legitimate discursive responses to the surgical situation. While the surgeon is the apparent main actor during the central operation phase, the definition brought by the anaesthetist is also valid and must be taken into account. Given the commitment of this work to a structuralist sociological perspective, it is to further investigation of the nature of these definitions, and to interpreting the structure of the discourse thus constituted that the rules governing the division of labour will now be subjected. These rules, it will be suggested, permit a dynamic tension between anaesthetist and surgeon whereby a successful carrying-off of the operation, not only in physiological, but social terms, is achieved. To discover how

this tension is perceived by the actors, anaesthetists are now given the opportunity to speak for themselves.

Anaesthetists talking about Surgeons

> There has always been a love-hate relationship between anaesthetists and surgeons. (Interview with Dr J 29/1/7/8)

During the period of fieldwork, the researcher found anaesthetists to be particularly valuable informants. Partly this was due to the spatial arangements of the theatre, close to the anaesthetist's trolley being a good place to stand, out of the way and generally ignored. Secondly, anaesthetists often have long periods of virtual inactivity, punctuated only by occasional note-taking, during which only a deviation from norms will instigate any activity. They were therefore usually very happy to break with the tedium to talk to the researcher. As a result, the 'naive anthropologists' in the OT provided the researcher with many useful insights into the social organisation of surgery. It is a major assurance on the validity of the analysis that it is often grounded in the discourse of these valuable informants. Anaesthetists were particularly forthcoming on their perceived superiority to surgeons.

Anaesthetists and surgeons are based in different hospital departments, with their own internal secretarial and administrative support, their own hierarchies and their own internal political concerns. As individuals, consultant anaesthetists and surgeons may have private practice and membership of other bodies both clinical and non-clinical. However, in the OT, these two autonomous specialties come into close contact, and are highly dependent upon each other. The comment of one informant, that 'surgeons need anaesthestists, and anaesthetists would have no work without surgeons' (Interview with Dr C 23/2/7/3), while perhaps obvious, is of

interest here, for it will inscribe at an interpersonal level the symbiotic aspects of the relationship between individual anaesthetists and surgeons.

Symbiosis, as with any dependency, need not of course be uncritical, as the reference by Dr J noted above of surgeons as technically competent in 'carpentry', suggests. A major source of irritation for anaesthetists appears to be effectively in-built in the administration of elective surgery, whereby referrals from GPs to surgeons do not concurrently lead to an anaesthetic consultation prior to admission. As Dr J described:

> A patient goes to the GP, who identifies a problem and refers the patient to the surgeon of his preference, most likely as a result of the old-boy network rather than any thoughts about waiting lists. How patients are sent for (from the waiting list) is up to the surgeon. Sometimes, rarely, a date will be fixed at the out-patient appointment and put in the diary, but at the other end of the spectrum, the surgeon's secretary determines who comes in off the waiting list. Or a consultant may plan lists at the beginning of the week, and state which cases he wants to see. Then when a patient is admitted, he is seen by nurses, then a junior doctor who will do investigations, but unlikely any which they might think the anaesthetist will need. (Interview Dr J 12/2/7/1-3,5)

Patients may thus be admitted who are quite unsuited to surgery because of their being at high risk from general anaesthesia, or may be put on a list without recognition of the long induction time associated with non-general techniques such as epidural anaesthesia. Dr J enlarges:

> Surgeons assume that there is nothing wrong with a patient apart from what they having the operation for. But this may not be the case, and must be identified. There may be

> consequences of the treatment for the anaesthetist, because while a surgeon is interested in the patient in terms of the abnormality, the rest of the patient is of interest to the anaesthetist.
> Two to three per cent of patients will have a problem which cannot be sorted out in advance, and in these cases your choices are either to hope for the best, or to cancel the operation, or initiate further investigations. But some of these could have been done by the GP, or by the surgeon, or could have been done if an earlier admission had been arranged. (Dr J 12/2/7/6-7)

As a consequence, it is usually only after a patient has been admitted for surgery, probably the previous day, that an anaesthetist will have an opportunity to assess a patient:

> An anaesthetist should see the patient, or should at least be informed about the patient by the house doctor. The anaesthetist can contact the surgical departmental secretary to find out who is on the list, or wait till five-thirty on the day previous to a list, when it is pinned up, but some surgical firms will not have been able to concoct a list till the morning of the schedule, and its very difficult to get details of the list which may indicate problems. (Dr J 12/2/7/8-9)

This particular informant was strongly critical of surgeons' inability to put together a list which fitted into a three-hour session. The comments reported here were made against a backcloth of a particularly chaotic week in plastic theatre during which patients had been scheduled to be in theatre hours before they were admitted, and two major cases had been scheduled for an afternoon session and had had to be re-arranged. During a lull of some forty minutes while a patient was given a pre-med and transported to theatre, the researcher was invited into a linen store in which a catalogue of apparent

incompetence of surgical organisation was recounted by anaesthetist and theatre sister. (Field Notes 12/2/7/2)

This allusion to incompetence is however restricted to ability to administer:

> Anaesthetists are well organised, surgeons tend to be less well-organised, they can rely on junior staff, when hell breaks out, it breaks out very quickly. (Dr J 29/1/7/6)

> It's a problem having to think for everyone. You suppose that everyone knows what they are doing, but much of the time they don't seem too. Aanaesthetists perhaps are in a better position than most to have an overview. (Dr J 12/2/7/12-13)

The administrative incompetence imputed to surgeons reaches apogee when it directly affects anaesthetists, as it does over the time taken in the anaesthetic induction of the patient, a major source of irritation on both sides.

> Anaesthetist Dr C: 'The surgeons don't consider the anaesthesia to be anything other than time wasted, and do not seem to calculate for it when they make up a list. They don't take any interest in the anaesthetic, even though they depend on it. We have to have the patient ready when they want it. I was in the US; there if you say it will take an hour to prepare a patient, the surgeon will go to his office for an hour, and do some paperwork.' (Field Notes 23/2/7/2)

> However a list is made up, directly or from a waiting list, it is a real problem for the smooth running of surgery that surgeons will think of the operating time, but will forget the anaesthetic and induction time. (Interview with Dr J 12/2/7/5)

Consequently, at the end of the induction, the surgeons may be waiting, gowned and masked for the anaesthesia and preliminaries to be completed.

> As the patient was slipping into unconsciousness, the consultant surgeon Mr F peered in through the anaesthetic room window. All the nurses immediately pulled up their masks, stood stiffly erect, and pulled open the doors to the theatre. The anaesthetist Dr C murmured to the researcher 'Did you see that?' (Field Notes 23/2/7/1)

One anaesthetist Dr W, who was a general practitioner who came into General to do an anaesthetic list a week commented:

> I'm actually quite slow, and I don't actually know who is on the list till I arrive, so I don't usually give pre-meds. So it's necessary to make sure the patients are well asleep before bringing them into theatre, or they (surgeons) will start operating and they're only half asleep. (Interview with Dr W 17/3/7/7)

On the other hand, the anaesthetist will not want to keep the patient unconscious for any longer than necessary, and may attempt to ensure a prompt start to surgery:

> The anaesthetist will arrange a pre-med, either directly, or from theatre via the house officer. Timing is critical, so it is essential to be able to predict the length of surgery. (Interview with Dr J 12/2/7/9)

> Most people know how long it will take (to prepare the patient), perhaps thirty minutes to an hour for a major case, but some anaesthetists will not start the first case till the surgeon arrives. The surgeon can then go and dictate his letters, we will say 'We'll call you when we're ready.' (Interview with Dr M 21/5/7/6)

This technique can have its problems however:

> The anaesthetist Dr D had induced the patient and he was ready for the operation to begin. However the surgeons were in their office. Dr D went to the scrub room door and shouted 'Surgeons!' to call them. On a subsequent case, having induced the patient for a very minor procedure, the surgeons were not scrubbed and ready. By the time they were ready, the anaesthetist had been forced to attach monitors because a longer period of unconsciousness was required than originally anticipated. (Field Notes 5/2/7/2-3)

The lack of recognition of time associated with anaesthesia also extends, in the case of day surgery (see Chapter 8) to recovery: 'You have to give the patient an anaesthetic and let them recover. If there are not suitable cases, then it is not worth (carrying out day surgery) as it will not free beds.' (Interview with Dr J 23/2/7/7)

These criticisms of surgery and surgeons apply to areas considered legitimate concerns for anaesthetists. However no intimations of incompetence in operating itself was ever offered by an anaesthetist in discussing surgeons with the researcher: the criticisms were concerned rather with those aspects of a patient's career which were the realm of the anaesthetist, and with apparent surgical inability to act in concert with their anaesthetist partners.

> The surgeons regard the theatre as their own, they say what will go on. (Dr C 23/2/7/3)

> Surgeons will only change the way they work if they are forced to by re-organisation. (Dr F 24/6/7/4)

> I will see a patient the evening previous to operation, and object most strongly from the point of view of arranging anaesthesia if subsequently a list is changed. (Dr M 21/5/7/6)

Similarly, praise or approbation of skill was not observed between surgeon and anaesthetist:

> An anaesthetist would not acknowledge good surgery, any more than vice versa. (Dr J 3/3/7/7)

It is apparent then that conflict arises between anaesthetists and surgeons over issues of division of labour - both parties, while recognising the input of the other to the procedure (not to do so would make a mockery of the proceedings), seek to define the patient in different ways. It was suggested by one informant that an anaesthetist has a more 'holistic' approach than the surgeon's simple concern with a lesion or dysfunction, and will therefore perceive the patient in context. This idea was developed by Dr J:

> Assessment for anaesthesia goes hand-in-hand with surgical assessment. Usually an anaesthetist has to do a seperate work-up (case-history, examination etc. to assess a patient's condition), because while surgery, and medicine in general is concerned with <u>disease</u>, the anaesthetist is concerned with a patient's <u>fitness</u>. A patient will be assessed as unfit by an anaesthetist if the disturbance to the system caused by anaesthesia, and aggravated by surgery would threaten survival. That is a different concern to that of the surgeon.
> Researcher: Does that affect the questions in your work-up?
> Dr B: Yes, we have to ask questions in relation to health, rather than about the condition to be treated in surgery. (Interview with Dr J 29/1/7/11) (my emphasis)

In this extract, Dr J articulates the contrary and in some senses contradictory definitions of the areas of concern of surgeon ('Disease') and anaesthetist ('Fitness'). Although the distinction was pursued in subsequent interviews with Dr J and other anaesthetists and surgeons, its centrality to understanding the dialogue between the specialties was not recognised till a later stage in field work. The importance of the notion will now be examined in detail.

The patient as 'Ill' and 'Fit'

Dr J made, in his usage, a distinction between 'disease' and 'fitness'. For the purposes of this analysis, following sociological convention (Freidson 1970:205), the term disease is modified to 'Illness', (that is, the social label attached to a particular type of deviance from health, as opposed to the presumed underlying biological state.) Is it appropriate to similarly modify 'fitness' to 'health', as the apparent opposite of 'Illness'?

For a number of reasons it does not seem appropriate. Firstly, as far as possible it is desirable to preserve the actors' own terms. Secondly, sociologists have recognised that it is extremely difficult to define what health is, as it is contingent on many culturally defined norms and values (Twaddle 1974; Zola 1966; Zborowski 1969). The WHO (1985) definition of health as an absence of biological impairment also fails to recognise the socially constructed nature of illness. Thirdly, as a corollary, it is the situated-ness of this definition of health to the particular concerns of the anaesthetist: that it, the patient's capacity to survive and benefit from the surgical procedure, which needs to be addressed rather than the wider definition of 'health' which might apply in a different situation.

For these reasons, the Fitness of a patient to undergo surgery seems a most appropriate way of describing the concern of the anaesthetist, in opposition or in dialogue with the surgeon's concern with the patient's Illness - the deviation which has led him/her to the surgical setting. A patient possesses both Illness and Fitness. Only the virtually moribund is entirely Ill; all other patients will possess balances of Illness and Fitness, contingent upon the relative severity of their condition, their personal characteristics and their previous history. The Fitness of the patient is a measure of her/his ability to survive the stress of the operation, and is therefore of concern to the anaesthetist, who is designated not only the task of rendering the patient suitable for surgery (unconscious or locally anaesthetised), but also the maintenance of the vital functions during surgery. If s/he is not convinced that these vital functions can be maintained, s/he will declare the patient 'Un-fit' for surgery.

The conflict with the surgeon's definition of the patient is now clear. The surgeon is interested only in the 'Illness' of the patient, her/his deviation from a norm of structure or function. By definiton the patient is 'Unfit', but in a different sense to that employed by the anaesthetist, here to be Ill or unfit is to make a patient suitable for surgery.

Surgeon and anaesthetist have different roles in relation to the patient as a result of their particular interests. For the surgeon:

1. The patient presents with a deviation from a norm, an Illness.
2. The surgeon alters the Illness of the patient, by ' resection, excision or reconstruction of the deviant tissue.
3. The patient's Illness is thereby removed or reduced (if the operation is 'successful').

For the anaesthetist, there is a quite different pattern:

1. The patient presents with a complement of Fitness, or capacity to withstand physical stressors.
2. The anaesthetist submits the patient to stressors (surgical shock, anaesthesia) within the limits the patient can tolerate, and monitors the response to ensure these limits are not surpassed.
3. The patient's Fitness is thereby (temporarily) removed or reduced.

According to this model, an operation thus represents for the surgeon, the **desirable reduction in Illness** of a patient. For the anaesthetist it represents the **undesirable reduction in Fitness** of the patient. There is therefore a necessary trade-off of Illness and Fitness in any operation. Surgeons and anaesthetists act **co-operatively** to ensure that the outcome of any operation will be seen as 'successful' in the sense that the balance between Illness and Fitness post-operatively is perceived as 'better' than pre-operatively.

Given that two dimensions, of Illness and Fitness are involved, the possible outcomes of surgery may be constructed into a 2 x 2 property space as a consequence of this interaction (See Fig 5.1). At first glance, this property space appears to suggest that it is only in the top left-hand quadrant (cell A) in which patient outcome will be perceived as successful, in that the deviance is removed or reconstructed, and that the effect of the operation does not itself lead to mortality or further morbidity.

In notation, this may be shown as:

I r : F nr → s

(I = Illness; F = Fitness; r = reduced; nr = not reduced; s = success; ns = not success; : = coincident with; → = results in)

Figure 5.1: Interaction of patient Illness and Fitness

Fitness	Illness: Reduced/Removed	Illness: Not Reduced/Increased
Reduced within tolerable limits	**Operation successful** Patient condition improves, health enhanced (I r : F nr) **A**	**Condition un-responsive** Patient does not improve, but Fitness retained (I nr : F nr) **B**
Reduced beyond limits	**Operation 'successful'** Patient's fitness temporarily or permanently compromised In ITU or dead (I r : F r) **C**	**Operation a failure** Patient more ill and with little reserve of fitness (I nr : F r) **D**

(Notation: I = Illness; F = Fitness; r = reduced; nr = not reduced)

In cell B, patient Fitness is not compromised by the anaesthesia and surgical shock, but the surgical intervention does not resolve the deviance, and may in fact increase the Illness.

In Cell C, 'the operation was a success but the patient died' - the lesion was successfully resolved, but the compromise to the patient's Fitness was very great, although in some cases not permanent or fatal.

Surgery on patients in Cell D is unsuccessful, and the effect both of this and of the operation per se on Fitness leads to deterioration or death.[4]

However, if we inspect the outcomes in these other cells it becomes clear that from a Western cultural perspective, outcomes in cells B and C are not necessarily considered as failures. For example a patient whose outcome is in Cell B (Surgery unsuccessful in reducing Illness, but Anaesthesia successful in retaining stock of Fitness) will be perceived as having submitted to the healer, who 'did her/his best', but despite whose efforts did not achieve an improvement; however the patient was not seriously compromised as a consequence. The surgical team will be recognised as acquitting themselves satisfactorily. This outcome may be represented in notation:

$$\mathbf{I\ nr : F\ nr \rightarrow\ s}$$

Similarly, for patients with an outcome in cell C, the surgery will be perceived as 'heroic' (rather than foolhardy!) despite the dead or virtually moribund patient at the end of the procedure.

$$\mathbf{I\ r : F\ r \rightarrow\ s}$$

The model demonstrates the interaction between anaesthetist and surgeon in surgery, which thereby concerns itself with both Illness and Fitness. Only in cell D, where both a non-reduction in Illness **and** a reduction in Fitnessoccur together, is the surgical outcome perceived as failure.

I nr : F r → ns

Only for these patients, who die or are severely weakened by surgery which does not even manage to remove or reconstruct the physical deviance, will approbation not be forthcoming for the surgical team.

By demonstrating the interaction of Illness and Fitness, the model defines both the **co-operation** and the **conflict** within the relationship between surgeon and anaesthetist. The relationship is co-operative because both parties must have an input into the surgical process for the outcome to be deemed satisfactory, but it is in conflict, because surgery may compromise anaesthesia (I r → F r) or the anaesthetist may refuse to allow high risk surgery (F nr → I nr).

However the principal theoretical significance of the model lies in its ability to explain these cultural associations with healing which does not in fact apparently heal. Surgeon/ anaesthetist interaction over Illness and Fitness permits a wide range of outcomes of surgery to be seen as a passage from an undesirable to a more desirable status. It permits a cultural definiton of 'healing' having taken place, even though in a strictly physiological sense, some of the procedures may have not achieved any such improvement in status, possibly the reverse.

In the next section the practical validity of the model will be tested by assessing a number of case studies in which these interactions between Illness and Fitness, and consequently

between their 'representatives' in the OT, surgeons and anaesthetists respectively, occur. Before considering the cases, a further attribute of the model must be noted: the possibility that a patient's outcome might not be fixed, but follow a 'career' through the different cells of the property space.

For example it is reasonable to expect that a patient initially in cell C (I r : F r) may, with the passage of time, and the ministrations of Intensive Therapy, fully recover from the effects of surgery/anaesthesia and move into cell A. Similarly certain patients initially in cell D (I nr : F r) may in time move into cell B, where, despite the persistence of the lesion, no long-term compromise to underlying fitness remains. However, while movements vertically are possible, lateral movements are not possible without further surgery. Once illness has been defined as either reduced or not reduced/increased, no subsequent re-definition is permitted. Thus, definitions of post-operative Illness are permanent while definitions of post-operative Fitness may be mutable.

This is an important prediction from the model, for it suggests that normally patient Illness will take precedence over patient Fitness, because while post-operative Illness is defined immediately, and is certain, post-operative Fitness, although possibly unfavourable to begin with, has uncertainty built into it, and may with the passage of time change to a more favourable outcome. It is therefore a prediction of the model that in extremis, projections of favourable post-operative Illness will take precedence over coincident projections of post-operative Fitness. In other words, the bias will be in favour of operating where there is a chance of reducing Illness, despite consequent danger to Fitness.

Testing the model: four case studies

To test the model of surgeon/anaesthetist interaction four cases have been selected in which the degree of patient Fitness and patient Illness varied. For instance, in the first case, a vascular graft in a middle-aged man, Illness and Fitness were both high. Figure 5.2 indicates the relationships in the four cases. The model predicts differing interactions in the four cases, such that the role of the anaesthetist will be emphasised where Illness is low, and that of the surgeon emphasised when Illness is great. In other words, that the definition of Illness takes precedence over the definition of Fitness. In two of the cases (2 and 4) there are major complications, in one arising from the anaesthesia and in the other from the surgery. These provide further opportunities to investigate the interaction and assess the extent to which the model predicts what was observed in these cases.

Figure 5.2: Interaction of Illness and Fitness in four cases

Fitness	Illness: High	Illness: Low
High	**Case 1** Graft	**Case 3** Hypaesthesia
Low	**Case 4** Meningioma	**Case 2** TURP

Case Study 1: Arterial graft (Field Notes 17/2/7/1-8)

General Theatres
Surgeon Mr M
Anaesthetist Dr J
Scrub Nurse Sister G
Assisting surgeon Senior Registrar; two surgical house officers
Anaesthetic nurse J; Four theatre nurses; also present ambulance-man trainee, researcher
The patient is a 58-year-old male undergoing aortic bifemoral graft for aortic aneurysm.

9 a.m. Patient is brought to general theatres and enters anaesthetic room accompanied by ward nurse. Dr J has visited the patient the previous evening, and a pre-med has been administered on the ward. The patient has no history which would suggest risk from general anaesthesia. He is suffering from a large aortic aneurysm (a collapse of the elasticity of the wall of the main artery of the body) as a result of atheroma which extends to the junctions with the two femoral arteries. Replacement of the affected aorta and tops of the femoral arteries with a synthetic graft is necessary to avoid either rupture of the aorta and/or thrombosis in the lower limb vessels.

Dr J had been informed of the case the previous week:

> Mr M was completing a case in general theatres. He turned to Dr J: 'Oh by the way, we have another of those bi-fems next week.' Dr J asks for brief details, then turns to the researcher: 'You should really be here to see that case, it will take up the whole morning list.' He then describes the procedure to the researcher.

There was no question that the procedure would take place, even though no anaesthetist had at that time seen the patient. The information appeared to be given only so that Dr J would know well in advance of this major case. (Field Notes 12/2/7/6)

Anaesthesia was administered to the patient by a cannula inserted into the left forefinger. A cocktail of anaesthetic and muscle relaxant (curare) was given, and the usual silence fell as the patients eyes flickered and closed. Immediately, a mask is attached over the patient's nose and mouth, and gaseous agent and oxygen administered, the assistant squeezing a rubber bag to artificially breath the now-paralysed patient. The patient is wheeled into theatre, and connected to the ventilator on the anaesthetic trolley. Because of the length of the procedure (three to four hours), complex monitoring is required. In addition to the normal sensors which measure pulse rate and blood pressure, electrodes were attached to provide an ECG trace, and sensors connected to measure venous and arterial blood pressure. A cannula was inserted into the median cubital vein (behind the elbow) and a drip attached to provide access to the patient's circulation for saline, plasma or whole blood.

Dr J had also brought into theatre in a large bag a piece of non-standard equipment, an automatic syringe infuser. The researcher questioned him:

> R: Does this extra gear come from the department?
> Dr J: It belongs to me, well, it belongs to the department of Anaesthetics. The reason I have it is because I'm running a trial of a particular drug for a company, and they provided the machine. The department couldn't afford it, well, they could afford it, but .... . I looked at this particular drug, and thought it would be a good one to infuse by syringe infuser. (Field Notes 17/2/7/3)

This equipment was used to inject a measured dose of relaxant throughout the long operation, thereby ensuring that satisfactory surgical access would be maintained. Dr J was setting this up while the patient was draped with towels and prepared for surgery. The skin incision began at approximately 9.30 a.m. Once the operation began, the anaesthetist seated

himself so he could observe the various monitors. Every ten minutes he marked readings in the patient's charts, which are kept on the anaesthetic trolley for the duration of the operation. Only at one point, when the synthetic graft was being sewn in place, did Dr J move to a position where he could observe the wound, which he did briefly, and mainly apparently to look at the level of blood loss.

In order to assess the respective responsibilities of surgeon and anaesthetist within the surgical team a number of events during the operation will be documented.

1. After dissecting down to the aorta, it was discovered that the organ was diseased to a higher level than had been thought, and it was necessary to dissect out the vessel further than had been intended and into a more inaccessible position. The surgeon informed the anaesthetist, as it entailed an increase in operation time. (10.50 a.m.) The anaesthetist was also informed when the aorta was clamped before resection. This was because clamping would affect measurement of blood pressure artificially and it was necessary that the anaesthetist did not respond inappropriately. (11.30 a.m.)

2. The period when the aorta was clamped was the most critical, as no blood could reach the lower limbs during this period. The anaesthetist's concern to ensure that no permanent damage resulted from the operation was greatest during this period, and Dr J was highly vigilant of any contra-indication, and when a phone-call for him was relayed by a nurse, he said he was unable to leave the theatre and would call back.

3. The synthetic graft material is initially permeable, and once sewn in place at the top must have blood leaked through it to render it impermeable as the blood clots. Blood pressure during this phase fell dramatically, and the surgeon mentioned that the clotting was not taking place quickly 'I'm afraid

there's rather a lot of blood in here'. Dr J quickly put up a unit of plasma on the drip and wrote a prescription for four units of blood, which was then sent to the transfusion service in the hospital by porter. During this period a low blood pressure alarm was sounding on a monitor, and was turned off to reduce the sense of alarm. (11.50 a.m.)

4. Mr M sewed one of the graft 'legs' to a femoral artery, and then supervised his senior registrar on the other side. However the consequent anastomosis (join) was not blood-tight and the sewing had to be cut and re-done by Mr M. Dr J was kept informed of developments. (12.25 a.m.) Even after this repair, a small amount of bleeding was still occurring. Eventually it was decided that the leakage was from the top end of the graft, which was very inaccessible and could not be further repaired and would probably clot in time. Bearing in mind the length of the operation, a drain was inserted and the patient was sewn up. (12.50 a.m.)

5. Dr J was concerned to ensure that blood loss was replaced. A minor problem had occurred when only two units of blood were immediately available, and at one point plasma had to be substituted. Complex methods of measuring blood loss are used, including collecting and measuring all liquid drained from the operation site, and weighing blood-soaked swabs. In this way a rough guide to blood loss was obtained although Dr J told the researcher that the method was 'considerably inaccurate'.

6. While the skin suture was being competed, the anaesthetist administered the antidote to the curarizing agent. The wound dressed and the patient transferred to the trolley, oxygen was given and the patient brought to consciousness. Once he had been seen to be awake he was moved to recovery. The operation has been long and traumatic, and the patient subsequently was transferred to the Intensive Therapy Unit (ITU), under the care of the anaesthetist and specialist nursing staff.

In this case, which has been described in detail, the patient was initially diagnosed as having a large complement of Illness, and a satisfactory complement of Fitness. Throughout the procedure the surgeon's definition of events took precedence over that of the anaesthetist, but the problems of anastomosis compromised the patient's Fitness seriously, and the operation was concluded in some haste. In terms of the model (as outlined in Fig. 5.1), the patient ended up in Cell C (I r : F r → s) with the expectation that in time he would move into cell A with the benefit of Intensive Therapy. The operation was therefore considered 'successful', although a possibility remained that the patient would succumb from shock to the vascular system and loss of blood, the aneurysm had been successfully resected and replaced.

Throughout the operation, the anaesthetist was acting as **proxy** for the patient. His ability to breath was under the control of the anaesthetist, and his heart rate and blood pressure was monitored and manipulated chemically during the procedure. When the operation was stressing the patient, sapping his complement of Fitness, the anaesthetist acted to moderate this loss, conserving enough Fitness to see him through the operation. The anaesthetist, on behalf of the patient, antagonised the surgeon's actions which were having the effect of removing his Fitness as well as his Illness.

In the next case, the anaesthetist is forced to compromise patient Fitness more than he would wish. **(For reasons of confidentiality, details of this case have been disguised)**

Case Study 2: TURP (Prostatectomy)

General Theatres
Surgeon Mr X
Anaesthetist Dr Z
Scrub nurse C
Theatre Sister Y and one student nurse
Also present ambulance-man trainee, researcher
The patient is an 80-year-old male with a history of angina.

The operation is a trans-uremic resection of the prostate (TURP), a procedure of removing prostate hypertrophy blocking the urethra by insertion of tubular knives into the urethra from the exterior and diathermy to seal the wound.

3.40 p.m. The patient was brought to the anaesthetic room in a very drowsy state following pre-med. Dr Z is to administer a spinal anaesthetic, as the patient is high-risk for a general. The patient is turned on his side and, a local anaesthetic having been applied, the spinal needle was inserted between the lumbar vertebrae. Some difficulty was experienced because of calcification of the spinal dura which surrounds the spinal cord. (The objective in a spinal injection is to enter the sub-arachnoid space, within the outer two meninges (membranes around the cord), but of course taking care not to damage the spinal cord.) Once the needle had been positioned correctly, a sterile catheter was introduced via the needle.

Researcher: How do you know you are in the right space?
Dr Z: You test by feeding in the catheter, if you are in the correct place you can easily feed it in.

Dr Z has some difficulty, and had to use a second spinal set, having not been able to enter the sub-arachnoid space between the vertebrae selected on the first attempt. Once the tube is in place it was taped to the patient, and a syringe attached by means of which measured doses of anaesthetic could be infused. The patient was taken into the theatre and prepared for the operative procedure (lithotomy position, with legs in slings attached to the end of the table), with standard blood pressure and heart rate monitors. The induction had taken thirty minutes.

Mr X begins the procedure, which in normal circumstances is considered relatively minor. The anaesthetic agent was infused at a given rate calculated from the patient's weight. It soon

became apparent, however, that the patient is still experiencing some sensation and moving. Some fifteen minutes into the procedure there is the following exchange

Mr X: It's no good, whenever I use the diathermy he moves. (The implication is that there is poor analgesia)
Dr Z: Well I have given the patient all the anaesthetic which he can safely receive.
Mr X: I cannot carry on with the procedure when he is moving.
Dr Z: I don't think the spinal can be working. I had better put him under.

Dr Z proceeded to induce the patient, who is still affected by the pre-med, into general anaesthesia using a gaseous agent, and the operation is concluded with the patient unconscious. The procedure ended, and the patient awakened, Dr Z spent some time in the recovery area to ensure that he was comfortable.

In this case study, the anaesthetist has been forced to compromise the patient's Fitness by a general anaesthetic, which the patient's age and history made high risk, because the spinal had not worked (probably because it was not in the correct space inside the meninges). A minor surgical procedure (low or medium Illness) was transformed from having little effect on Fitness to having a greater effect. Patient outcome, which should have been in cell A (I r : F nr → s) was forced into cell C (I r : F r → s).

There was an alternative, that of abandoning surgery, which would have led to an outcome in cell B (I nr : F nr → s), but this was not entertained by the surgeon, and the anaesthetist had no choice but to acquiesce, and administer general anaesthesia. The consequence was that the anaesthetist was unable to fulfil his role of proxy for the patient's Fitness during the operation, and the conflict thus generated led to a

very poor outcome for the patient, although in cultural terms it was a satisfactory outcome.

(It should be noted that this is the only occasion witnessed by the researcher in which any pressure was placed upon an anaesthetist by a surgeon. Even so, there was no direct suggestion that the anaesthetist had been incompetent, although the researcher's presence may have affected this.)

In the next case study, the anaesthetist conducted complex procedures to ensure the patient's Fitness was not compromised during what was a very minor procedure.

Case Study 3: Hypaesthesia of Thumb (Field Notes 3/3/7/3-6)

Plastic theatres
Surgeon Mr T
Anaesthetist Dr B
Scrub Nurse D; also present Nurse C, anaesthetic nurse J, two surgical registrars, researcher
The patient is a 20-year-old male with hypaesthesia (lack of sensation) in distal joint of right thumb following accident.

The procedure is micro-surgical dissection to expose severed nerve and oppose ends to encourage healing and recovery of sensation. The patient has been admitted on a day basis.

11 a.m. The patient was pre-medicated in the anaesthetic room of plastic theatres by Dr J. The surgical procedure is intricate but minor, taking some thirty minutes, however a degree of post-operative pain can be expected due to the very sensitive area under operation. The anaesthetic to be employed was therefore a brachial block which will supply analgesia for a period after the operation.

Researcher: Why not use a local anaesthetic?
Dr B: A block is more elegant, you are affecting the nerve at a higher level, and the result will be better pain control. It is harder to administer, it is a mixture of experience and guesswork where the nerve plexus is, and

you do not want to inject actually into a nerve.

As he was administering the injection, to the upper arm just below the armpit, apparently with considerable discomfort to the patient, Dr J explained that blocks were also unpredictable in how long they took to act - the norm being twenty minutes. The patient was left in the anaesthetic room for the block to take effect. No numbness had resulted after thirty minutes, and with the surgeons impatient to begin, the patient who is now sleepy with the pre-med, is taken into theatre and preparations begun, despite there not yet being anaesthesia in the affected part.

After a further ten minutes the absurd spectacle was presented of Dr J quietly approaching the drowsy patient and jabbing his finger with a sterile needle. The patient jumped and commented 'What was that?' to a retreating Dr J. Eventually, after a further wait, repetition of the needle prick indicated that the block had taken effect and surgery was able to begin.

In this case study, according to the model, a minor degree of Illness was successfully treated with patient outcome in cell A (I r : F nr → s). If the patient had suffered a large amount of post-operative pain (reduction in Fitness) with such a procedure, this would be perceived as out of proportion to the Illness. It was therefore necessary for complex anaesthesia to protect the Fitness of the patient. Had this not been the case, patient outcome might have been perceived as being in cell C, although with rapid transfer to cell A.

This emphasis on the anaesthesia, which in fact took longer than the surgery itself, is common in plastic theatres. In an extreme case, anaesthesia with femoral block took thirty minutes for a five-minute surgical procedure (Field Notes 24/6/7/3). Anaesthetists have a great deal of autonomy in plastic theatres at General, and the layout of the OT with its

anaesthetic rooms separated from theatre by a corridor (see Fig. 3.2) enhances this autonomy, defining the procedures of anaesthesia as very important components of the passage through the OT. Surgeons were never observed to enter plastic anaesthetic rooms. As will be seen in the next case, this is the opposite of the situation in neurosurgery. Plastic surgery is often very brief and by its nature non-life threatening; one surgical registrar justified its value to the researcher, as 'the only kind of surgery which reconstructs as well as resects' (Field Notes 19/2/7/4).

Case Study 4: Meningioma (Field Notes 24/2/7/4-9)

Neuro-theatres
Surgeon Mr C; senior registrar and two surgical house doctors
Anaesthetists Dr A and two registrars
Scrub Nurse Sister A; Three nurses
Also present researcher, visitor
Patient was a 63-year-old female with a tumour of the meninge covering the cerebral cortex requiring excision to relieve a life-threatening pressure on the brain.

11 a.m. The patient, who had been admitted as an urgent case, was brought to the anaesthetic room, which is an annexe of neuro-theatre B (see Fig 3.3). Dr A and Mr C viewed brain scans indicating the position of the tumour and discussed the patient's history; there is no contra-indication for general anaesthesia although the patient is poorly as a result of her condition. Induction is by standard infusion into left forefinger cannula, and administration of gaseous agent. Once unconscious the patient was transferred to the operating table, which is mobile, and can be brought into the anaesthetic room. The patient's head was clamped with an attachment connected to the end of the table which tightens metal points through the scalp into the skull. Leads for blood pressure, heart rate, electrocardiograph (ECG) and electroencephalograph (EEG) were connected to the patient's head, chest and limbs. The patient was draped and the table wheeled into the theatre.
Unlike the spatial arrangement in other theatres, in neuro-surgery, the head is the preserve of the surgeon, while the

tubes supplying gaseous agents and monitoring leads are fed under the drapes, down towards the patient's feet, and thence to the anaesthetic trolley. The anaesthetist and assistants take up position next to this trolley, and their attention is mainly devoted to observing the range of monitors. With two registrars, there is an abundance of anaesthetic support, enabling Dr A to regularly visit an earlier patient in recovery, and perform other tasks in the anaesthetic room. (Neither of these registrars appeared to have a particularly good grasp of English however, and at one point a question from Mr C about the patient's condition to one of them elicited a response which appeared to Mr C as indicating non-comprehension. The question was asked of Dr A when he re-appeared some minutes later.) As usual, anaesthetists showed very slight interest in the surgical procedure.

The patient was draped so only a small piece of scalp remained exposed. A flap of scalp was incised with clamps attached to the cut edges to prevent bleeding from this highly vascularised skin. Skull was trephinned with three burr holes, sawn and a section approximately three inches square removed over the tumour. The operation proceeded smoothly, with the tumour identified as meningioma, excised, and sent for biopsy. Although meningiomas are usually benign, they are highly vascular, and there was considerable haemorrhage after excision. When this had been stemmed, the meninges were sutured, skull replaced and scalp sutured. The procedure was completed by 12.30 a.m. With surgery completed, the patient was brought to consciousness. It was noted that patients having neurosurgery were not expected to provide the extent of response (speak a few words, grimace) expected of other patients. A hospital bed was brought from the recovery area into theatre; supervised by Mr C, the patient was transferred directly to this. 1.10 p.m. The bed was wheeled by the anaesthetists, via the anaesthetic room to the recovery area, which is fully equipped for intensive therapy.

Thus far, the case study suggests far less autonomy for the anaesthetist than in other theatres. The surgeon enters the anaesthetic room, discusses aspects of the surgery which may influence choice of anaesthetic agent, supervises the positioning of the patient on the table and draping. The Fitness of the patient is secondary to her Illness, as a consequence of the severity of the condition. Compromise to Fitness is seen as a necessary trade-off against reduction in Illness, which if un-treated would quickly kill the patient. The surgery has an outcome which objectively would be categorised in cell C, but which in the context of neurosurgery would be tentatively placed in cell A pending the consequences on Fitness. The success of the surgery must be ensured, and the surgeon involves himself with issues of Fitness because the alternative, of not carrying out surgery or conducting less heroic procedures, will lead to an outcome in cell B.

However, in this case study, outcome was not so immutable as in the other cases, as will be seen.

2.40 p.m. Mr C was operating to excise a benign tumour from the third ventricle of a patient's brain. Dr A was summoned to the recovery room to look at the former patient. She had an EEG trace which indicates unconsciousness as opposed to sleep. After conducting some tests, Mr A returned to theatre:

> Dr A: Mrs X seems to be a bit flat. She's displaying a (some technical detail of brain wave pattern - not caught). I wonder if you would like to have a look.
> Mr C: She's unconscious? (Dr A assents) Yes I'll come in.
> He quickly leaves theatre for recovery, his assistant continuing the operation.

Dr A had diagnosed a sub-arachnoid haemorrhage, which is causing pressure on the brain, and lapse into unconsciousness. Without emergency surgery, the patient would rapidly

deteriorate. Mr C quickly arranged for the third neuro-theatre (which earlier in the day he had told the researcher was non-commissioned because of cutbacks), to be opened to receive the patient. Returning to his current patient, his assistant (senior registrar) was delegated to conduct the emergency procedure consisting of re-opening the skull and meninges, removing the clot and determining the source of the haemorrhage. A house officer assisted, Dr A administered the anaesthesia, and nurses from theatre B serviced the emergency. 3.20 p.m. The tiny theatre was crowded with personnel (including a consultant surgeon from neuro-theatre A and other staff who have come to watch,) while back in theatre B things are very quiet, with only Mr C, a registrar anaesthetist, a scrub nurse and the researcher, who is called into service to move or adjust equipment in the absence of a circulating nurse.

By 4 p.m. the patient in theatre B's operation had been completed, and he had been taken to recovery. Mr C went to watch the emergency operation, which has progressed to the painstaking removal of the clotted blood which had haemorrhaged from the site of the operation earlier in the day. With the pressure removed, the patient has a better prognosis, but there has been considerable shock to the patient's system, and Dr A is concerned about weakness of blood pressure and ECG trace. Mr C watched from just inside the door, but no longer appeared to claim any rights over his patient. This was a difficult situation to interpret, but it seemed to the researcher that the anaesthetist Dr A had most authority at that point, with the senior registrar surgeon carrying out the task necessary to preserve the patient, with the two consultants reduced to the status of on-lookers. 5.45 p.m. The emergency operation was completed and the patient taken to recovery from whence she would be moved to the ITU in a very poorly condition.

In this last case study, the outcome turns out to be far from certain. Initially, it was categorised in cell A

I r : F nr → s

with the possibility of reverting to cell C if the compromise to Fitness was too great, an accepted risk in neurosurgery given its concern with urgency and life and death situations:

> We do not really have a concept of elective surgery in neuro. Most of the patients we see in out-patients are admitted as urgent cases, in that if they are not operated on their condition will deteriorate. There is no choice but surgery in most cases. (Interview with Mr C 24/2/7/4)

However in this case, it transpired that it was difficult to ascribe a 'successful' tag to the surgery, inasmuch as the excision of the tumour had been incomplete, resulting in a life-threatening haemorrhage. The outcome was being transformed not to cell C:

I r : F r → s

but to cell D:

I nr : F r → ns

in which not only has the surgery failed to reduce the patient's Illness, but the consequence of it upon the patient's Fitness has been catastrophic, a combination which cannot be perceived as a success.

What is to be made of the subsequent drama, and particularly of the apparent submission of the surgeon to the anaesthetist? After the resolution of the internal haemorrhage, the patient's outcome is no longer in cell D, but now in cell C, with Fitness much reduced, but at least a successful removal of the tumour, the Illness. So does this demonstrate that outcomes can move laterally after all? It is suggested that this is not the case, but rather that the day's events should be seen as two distinct operations, not parts of one procedure. In the first operation, as has been documented, the surgeon's definition of the

patient, in terms of Illness, is paramount, and as in other neurosurgery observed, little or no autonomy is accorded the anaesthetist. As a consequence of the bleed, which is both a failure to successfully complete the tumour excision and a disastrous compromise to Fitness, the surgeon came into direct conflict with the anaesthetist by occasioning a decrease in Fitness without the accepted trade-off of reducing Illness.

In this light, the second phase of the proceedings can be seen to have meaning for the participants as an operation in its own right. Further, while previously the poorly state of the patient was a consequence of her tumour, now it is a consequence of previous surgery. The anaesthetist, as the patient's proxy, assumes authority over the second procedure, to rescue some Fitness for the patient, while the surgeon has foregone his neutrality vis-a-vis *the patient's Illness*, and therefore his culturally-ascribed moral right to supervise the procedure. Whereas the usual relationship in neuro-theatres emphasised Illness (the surgeon's definition) at the expense of the anaesthetist's concern with Fitness, here the situation is reversed, and the anaesthetist's definition is paramount. The concern is entirely with rescuing some of the patient's compromised stock of Fitness, and the surgery is conducted under the anaesthetist's auspices, with eventual Fitness, not degree of Illness as the object. In fact the consequence according to the model is typified as an outcome in cell A:

$$I\ r : F\ nr \rightarrow s$$

although this does not seem to fully describe the situation, perhaps because the model assumes a co-operative relationship in which surgeon and anaesthetist have equal moral right to articulate their definition of the patient.

Discussion

In these four case studies, a selection of surgical cases have been categorised, according to the model, not only upon a variable which might be otherwise described as 'severity' of condition, in this model: Illness, but also on a factor concerned with the capacity of the patient to undergo surgery: Fitness. Before considering the studies a number of predictions were made from the model, some explicitly, others implicitly:
1. Surgeons are concerned with a patient's Illness, anaesthetists with her/his Fitness.
2. Patient outcome is contingent upon a co-operative effort between these actors, but also upon the inherent conflict of interests within the surgeon/anaesthetist interaction.
3. Whereas Illness outcome is fixed, Fitness outcome is potentially mutable. Patient outcome can therefore follow a career in terms of Fitness but not in terms of Illness.
4. Because of point 3, if there is a choice of procedures in which the outcome trade-off of Illness and Fitness varies, surgeons' influence in choice of surgical procedure will be greater than anaesthetists'.

The studies, which were not selected for any reason other than that they were representative of the range of procedures observed, have supported these predictions, and derived a number of corollaries. Considering each in turn, the first, most general, prediction was perhaps most clearly demonstrated in Case I, the aortic bi-femoral graft, where Illness and Fitness were both 'high'. The documented observations demonstrate the division of labour between anaesthetist and surgeon and their respective concerns with Fitness and Illness. The other cases, of hypaesthesia and meningioma, with their various interactions of the two dimensions suggests a first corollary:
C 1: The greater the extent of patient Illness, the greater the autonomy of the surgeon in the OT; the greater the Fitness of

the patient relative to Illness, the greater the autonomy of the anaesthetist.

The paradoxical nature of surgeon/anaesthetist interaction, as both co-operative and based in conflicting interests was best seen in case 2 (TURP), where a co-operative venture became one of conflict, in which either Illness was not reduced, or Fitness was reduced. In this case, predictions 3 and 4 were also upheld: whereas a possible poor outcome in terms of Fitness was potentially mutable to a better outcome in time, a poor outcome in terms of Illness was not. Therefore in this situation, the surgeon had more power to determine which outcome was followed. This leads to a second corollary:

C 2: An outcome of I r : F r is preferable to I nr : F nr for surgeons; but vice versa for anaesthetists.

The immutability of Illness outcome is of course best demonstrated in case study 4 (meningioma). In this case, the model assisted analysis by requiring the events to be seen as two separate operations with immutable Illness outcomes, rather than one procedure in which the second part altered Illness outcome from not reduced to reduced.

However the most interesting development of analysis resulting from case study 4 lies elsewhere, in the proposition regarding perception of 'success' of various outcomes:

<u>While not all outcomes are equivalent in a biological sense of success, outcome is also contingent on culturally defined expectations, and a range of outcomes will be positively appraised, so long as the interaction of Illness and Fitness is not I nr : F r.</u>

It was suggested earlier in the chapter that Western culture ascribes positive evaluations to surgery even when it has

either failed to correct a lesion, or has left the patient at death's door. Only when both these consequences coincide, is a negative evaluation imparted. In the model's terminology, it was the interaction of Illness and Fitness which explained this phenomenon, in terms of a trade-off such that only if a reduction in Fitness coincides with a non-reduction or increase in Illness is surgery negatively assessed. In other words, it takes both the surgeon and the anaesthetist to fail in their respective tasks to warrant a tag of 'failure'.

In case 4, just such a situation was developing after the first operation, but purely as a consequence of the surgeon's failure. The anaesthetist was able to rescue the failure because the reduction in Fitness was a direct consequence of the increase in Illness occasioned by the surgeon, rather than a coincident failure on the part of the anaesthetist. And even though the patient was likely to be extremely poorly after the second operation, it was the anaesthetist who had succeeded, by actually increasing Fitness from its low ebb. As the patient's proxy in the OT, the anaesthetist turned the patient's outcome into success.

The fourth case study also displayed the extent to which the surgeon protagonists have a moral right in their activities, despite the effects these may have on the patient. In the TURP, the anaesthetist lost his moral right to impose his will on the patient, and thereby define the patient's outcome, by providing inadequate anaesthesia. In case 4 the surgeon lost his moral right by permitting a predictable complication to arise from his surgery. But usually, the tension between these actors, each empowered in a different way to define the patient's outcome, succeeds in providing a culturally accepted new status for the patient which is better than the pre-operative status in some way.

Conclusion

The description and analysis of the four case studies, with the model developed in this chapter of a concurrent definition of a surgical patient both in terms of her/his Illness and her/his Fitness, has suggested a way of grasping the dual nature of the alteration which surgery makes in a patient. Not only is there apparently a status change at the level of physiology, but also a change which is culturally defined, whereby to have undergone surgery is to have been altered, in a moral sense.

In the last chapter it was seen how surgery, through the medium of aseptic technique acts as a moral force for purification, an identification of the patient with pure Culture, not polluted Nature. The physical layout of the theatre, and the circuits of hygiene define a transition which is to be conducted under the moral gaze of the surgeon as representative of Culture, of society. This transition is however highly dangerous, and it could be that the power of the surgeon might be too much for the patient. In this chapter it has been seen how this power is tempered, by a dialectic between actors concerned with the patient's deviance and her/his normality - the surgeon and the anaesthetist. The thesis (future status) and antithesis (past status) create a synthesis, which imposes a new definition upon the patient whereby s/he is transformed not only in terms of physiology but also at a cultural or moral level. These definitions may, it has been seen, be quite different, as in the case of the successful operation where the patient dies.

There is therefore, as a consequence of the findings of the last three chapters, argument for an understanding of surgical healing as a process by which a social as well as physiological transformation of the patient occurs. A patient begins with one social position (to be called simply 'A' for the time being), and as a consequence of surgery is attributed a new status, 'B'. Occasioning such a change would require the exercise of

power - authority and privilege, on the part of the surgeon. It will be to this hypothesis that this study will shortly turn.

This chapter began with a look at the conflicts which daily arise in the OT between surgeons and anaesthetists, and remarked upon these in terms of professional closure. The analysis in the latter part of the chapter suggests that perhaps it is more appropriate to take this closure as the starting point (following Foucault not Weber) - the focus of social power is embodied in the protagonists by societal sanction, by which the powerful transforming potential of surgery imposes not only physiological but moral order.

The final chapter in this part of the study draws together the findings from the chapters on the circuits of hygiene, sterile technologies and the dialectical relationship between anaesthetists and surgeons, and considers how the data reported may be synthesized within a theoretical framework.

CHAPTER 6: SURGICAL HEALING AND POWER

At this stage of the study, it will be valuable to attempt a preliminary integration of data reviewed in the previous chapters, in the light of the framework outlined in the introductory chapter.

In the introduction, the topic of the power of surgical healing in Western culture was grounded within a theoretical perspective upon the social meaning of healing, derived from a re-working of the Parsonian 'sick role' corpus of literature from a non-functionalist perspective - an exercise which drew upon Giddens' alternative theoretical rendering, structuration (Giddens, 1977; 1984). To recapitulate this perspective, as argued, briefly:

1. Parsons' analysis of the 'sick role' demonstrates how power is invested in the healer in two forms: authority - the control of the means of healing, and privilege - the moral right to exercise healing. Parsons is significant because he demonstrates that 'healing' is a social process.

2. 'Healing' may or may not fulfil a 'functional need' of society. What is of interest, once a functionalist reading is discounted in favour of a perspective which recognises the purposive action of human agents in constituting social structure, is to identify the social structural rules and resources which contextualise the healing activities of doctors and patients.

3. The rules and resources of social structure possess three modalities:

(a) signification of shared meaning
(b) domination through the control of resources
(c) legitimation through moral or evaluative rules
Interactions are conditioned by these structural modalities by:
(a) reproducing taken for granted knowledge of cultural forms
(b) facilitating resource allocation
(c) judgmentally evaluating conduct.

4. The situated purposive activities of those in the healing encounter produce and reproduce social systems through the three modalities:
(a) the attribution of appropriate meanings in defining sick and healed states
(b) the disposal and control of patients' bodies and biographies during sickness and healing
(c) the evaluation and judgement of the moral conduct of the sick and the healed.
To be sick is to adopt an identity, a social position and a moral label. To be a healer is to adopt an identity, a status and a moral right. These limiting attributes reproduce social structure and thereby contribute to social integration. The Parsonian sick and physician roles are descriptions of these limits, they are the 'bounded knowledgeability' possessed by the actors.

5. These roles thus describe power at the level of agency. The object of the study, however, is to identify the modalities of power at the level of structure - the rules and resources which structure healing activities, yet may remain unrecognised. This exercise is achievable through the use, as a resource, of the bounded knowledgeability of the actors, to investigate the unacknowledged conditions of action. This perspective links the three components of this study's title. Surgical healing is to be seen as a display of modalities of power, mediated through social structural forms which signify, dominate and legitimate. The research question generated by this theoretical framework

concerned the description and explanation of the particular contributions of the three modalities of signification, domination and legitimation to the specific authority and privilege attributed to surgery as a method of healing in Western society. The following hypothesis was put forward:

'The power of surgery as a mode of healing in Western society is a consequence of the cultural meanings of the particular structures of signification, domination and legitimation which surgery exhibits, both in its institutional arrangements and its everyday practices.'

It was also proposed, consequent on this hypothesis that:
1. Investigation of the techniques and practices of surgery, and of the surgical discourse, rather than of the personal or group characteristics of the surgical profession, will provide both necessary and sufficient explanation of the high status of surgery in Western healing.

2. The cultural meanings associated with surgery which make it a powerful technique of healing will have general applicability to an explication of the social significance of healing.

3. Neither micro nor macro methodologies are sufficient in addressing the hypothesis. Both fail to fully recognise that structure is both the medium and the outcome of situated and intentional social activities. The methodology adopted must be capable of integrating analyses of interaction and of spatio-temporal institutionalizations and structures.

To investigate this hypothesis, ethnographic investigation at General hospital, and an historical study of surgical sterility have been reported. This chapter supplies a brief resume of the findings so far. In the second part of the study, further material will be presented, leading to the final conclusions.

A resume of research findings and analysis

1. The study reported upon physical layouts within the operating theatre complex (OT) and the personnel who staff the OT. Routine movements of patients, staff and instruments through the surgical space were discerned and described, and the notion of the **circuit of hygiene** derived to make sense of these routines. This phrase acknowledged hygiene not only in the narrow sense of cleanliness: 'Hygiene[1]', but as a system of rules for promoting health (OED s.v. 'hygiene'): 'Hygiene[2]'. The most highly routinised of these circuits was that of the patient. It was hypothesised that **the movement of the patient through the OT and its constituent parts was a necessary and sufficient demonstration of the passage of the patient through the healing process. The routines of surgical healing, it was suggested, exhibited in highly condensed and therefore powerful form, symbols of a change in the social status of the patient.**

2. The rules of conduct defined by the circuits of hygiene concerned (a) the stages of the operative intervention (b) sterility (c) divisions of labour in the OT. They were largely implicit and conventional, and while they represented imperatives by which surgery is maintained as a 'safe' process of healing, the reality as reported by the ethnography demonstrated flouting of these rules, especially by high-status personnel. The irregular use of the surgical mask was the most significant instance of such a rule being broken, with many surgical personnel doubting its value in sterile technique. This anomaly informed the historical analysis of Chapter 4.

This investigation had the unexpected consequence of uncovering an apparent misunderstanding of a well-known incident in medical history, the development of modern sterile methods of aseptic surgery. Contrary to received knowledge, the part played by Lister in this innovation was minor, his techniques of antisepsis being rejected due to its basis in germ theory. A

new version of the traditional humoral theory led to aseptic operating, and the development of sterile operating garb. The innovators were the public health activists including the surgeon Simpson, and Florence Nightingale, who articulated in their arguments on cleanliness a moral view of infection. Dirt is matter out of place, a deviance from the moral order. **Whereas antisepsis imputed a role of polluter to the surgeon, asepsis allowed the surgeon the role of enlightened and purifying Culture over polluting Nature (infection). Surgical garb masks the polluting Natural body, and enhances the purifying agency of surgical Culture. Nature is denied, and the surgeon can safely act to change the cultural status of the patient through a social re-categorisation as healed.** This symbolic or ritual garbing ensures that the moral position of the healer is assured. Laxity in adopting its finer points can be seen as a change in the bounded knowledgeability of actors, who now acknowledge germ theory, and recognise the doubtful value of some of the ritualisation of garb, in an age of antibiotics.

3. This insight, of the importance of imposing Cultural definitions over the Natural in deciding the place of things, provides the first step beyond the bounded knowledgeability of the surgical actors, the first proposition as to the nature of power at the level of structure. It was used in the following chapter to examine the division of labour between anaesthetist and surgeon in the OT, in a return to the ethnographic material.

Anaesthetists and surgeons have different routines of movement in the OT; they have different domains in their labour on patients' bodies. Drawing on a definition offered by an anaesthetist informant, the division of labour was analysed in terms of the surgeon's emphasis on the patient as Ill, the anaesthetist's on the patient as Fit. There is a symbiotic, but potentially conflicting relationship in terms of these

definitions, but the significance is that this anaesthetist/surgeon dialogue defines a patient as having, not an absolute status, but one synthesised by an on-going dialectic of culturally defined Illness and Fitness. A series of case studies examined the interactions between Illness and Fitness in determining the 'success' of an operation. Only the loss of Fitness, concomitant with increase or no change in Illness constituted an operation as a failure. Outcome is contingent upon culturally defined expectations, which are acted out by anaesthetist and surgeon as proxies for the patient's Fitness and Illness respectively. This dialectical evaluation of the patient serves explicitly to enable a range of outcomes of surgery to be defined as successful healing. **The status of 'healed' is thus a moral as opposed to a physiological status for the patient.** The status of 'healer' must therefore also be a moral category.

4. The evidence thus far presented in the study, offers an explanation of the power - the authority and privilege - accorded surgical healing through the modulation of social categorisations. Three techniques unique to surgery: (a) the structured rules of passage through the OT, including the stages of the operative intervention itself, (b) the techniques of purification - of preventing a patient becoming 'matter out of place', and (c) the dialectical definition of a patient in terms of both Illness and Fitness, at a social structural level, significate the social process of 'healing'.

The first, through its explicit disruption of the culturally important barrier between external and internal, routinised within rules of the OT which reflect the movements across significant barriers significates healing through the control of healing resources - the OT and all its contents. This is the D - S complex of signification through domination described in Chapter 1; it demonstrates unequivocally that some change has been wrought in the patient.

The second and third techniques significate healing through the imposition of cultural definitions over, or in opposition to natural ones. They denote the nature of the change that has been wrought in the patient, from one status, the pre-operative status A, to another - the post-operative status B. That process is culturally defined as healing. The limits of what interventions may assume that title were identified in the chapter on the anaesthetist/surgeon dialogue. They significate through legitimation (L - S) 'healing'. Further, by so doing, they legitimate the right of the surgeon to impose that definition: her/his moral right to heal.

This analysis thus offers one answer to the first of the research questions posed in Chapter 1, concerning the means by which structural modalities of power (signification, domination and legitimation) contribute to the authority and privilege of the surgical enterprise. The origins and reproduction of surgical power, in this account, is achieved through a process of categorisation whereby patients are moved from one culturally defined status to another: a process which is labelled as healing by society. The possession of a number of explicit techniques render surgery a powerful form of healing.

This conclusion, while having contributed to an understanding of how the techniques of surgery mediate social structural modalities of power, begs a further question, which as yet remains unanswered, and one which if left unanswered, leaves the analysis thus far unproven, merely one hypothesis against others. Why for example, should it not be the expertise of surgeons, or the extent of resourcing, which denotes surgical power?

This second research question, outlined in the first chapter, concerns the social meaning of healing itself. Why do the structural modalities, demonstrated at the level of agency through the techniques which have been analysed in this study,

take the form they do? What is the importance of the social status change from A to B? To fully understand how surgery achieves its authority and privilege requires a grasp of the social significance of this status change which is wrought in its patients. The study is at the same point as was reached at the end of the analysis of Parsons in Chapter 1: it has described the process of healing, it has yet to explain it. It is to this task, that the study now turns.

In the second part of the study, the bounded knowledgeability of actors involved in surgery poses a problem once again. Once again, following the theoretical framework of structuration, the methodological solution is to look at the unacknowledged conditions of action. In Western biomedicine, the social significance of illness and healing is not explicit. It may be that, in general, it has lost its social function, as a consequence of its success in causing physiological amelioration. The writing within the sociology of health and illness concerning hospitalisation, chronic and stigmatising illness, suggest this is not the case, and the social has been made explicit by a variety of sociological methodologies. Earlier in this study, an analysis of absence and discontinuity in the history of sterility identified the principles underlying surgical hygiene. In the next section, another methodology, that of cross-cultural comparison, will be used, to excavate the cultural meaning of the status change involved in healing.

CHAPTER 7: LIFE CHANGES, SOCIETY AND STATUS PASSAGE

Introduction

The description of the movements of staff, patients and instruments around the OT in Chapter 3 led to the development of the notion of a circuit of hygiene, a principle used to organise and order the activities within the OT. It was suggested that the various circuits of hygiene ensured the safe passage of patients through surgery; and from this proposition was drawn the hypothesis that the particular techniques of surgery enhance the social significance of this form of treatment by making explicit the status change wrought in a patient, perhaps in a way which is more obvious than in other kinds of treatment/healing. Principles which are universally relevant to healing are seen in a condensed form in the practice of surgery as a result of such techniques as anaesthesia and asepsis, and the designation of an area aside from the ward (the OT) where the healing is conducted.

Having identified in the preceding chapters, the social structural forms which these unique techniques of surgery mediate, with their modulation of the social status change from A to B, it is now appropriate and necessary to assess the relevance and importance of this status change in the explanation of the power of surgery. In the coming chapter cross-cultural material of an anthropological nature is assessed in consideration of the social characteristics of changes in status. Before doing so, it is necessary to briefly rehearse a discussion from Chapter 1 relating to the nature of the 'technical' and the' ritual'.

On 'ritual'

Katz has suggested that sterile practices in the OT, because they are not entirely based on scientific validation, therefore possess ritual qualities, whose function is to define roles within the OT and enable activity to be ordered appropriately, and to provide the surgeon and other participants with autonomy of activity (Katz 1984:347).

There are two problems with the designation of an activity such as asepsis as 'ritual' at a methodological level. Firstly, it does not conform to the actors' own evaluations: any implication that activities are ritual or non-instrumental imputes irrationality, and with one or two exceptions in the present study (for example Infection Nurse B) would be rejected by informants out-of-hand. The researcher's experience of the incomprehension by informants of such suggestions led him to avoid such explicit questions which when asked threatened the research relationship (Field Notes 21/5/7/9). Secondly, and consequently, what is to be classed as non-instrumental or ritual, and what is not? If it is simply to be left to the judgement of the analyst what is or is not ritual, then the classification will be contingent upon many spurious factors, including the difficulty of 'making anthropologically strange' aspects of a biomedical culture which is part of that analyst's cultural set; or alternatively the designation of a practice as 'ritual' simply through lack of necessary knowledge of technical procedures.[1]

Any implication that practices in and around the OT are 'ritual' in some way is therefore to be approached with great care and circumspection. As Bocock (1974) has noted, Western societies do not possess overt ritualism outside the auspices of the Church (Bocock 1974:15). Many of the 'rituals' which that author documents - for example political rallies (ibid p69), youth or other sub-cultures (ibid: 184-7), and the arts

(ibid p149) - may better be termed 'ceremonial', if following Gluckman (1962) ceremonies are typified as any complex, elaborate or stylised conventions not specifically technical or recreational, enabling the expression of feeling, while ritual acts are a sub-group of the former specifically concerned with mystical notions which ascribe supra-sensible properties to phenomena. (Gluckman 1962:22)

What has become clear from investigating the historical roots of surgical sterility is that these practices do possess elements that operate at a level above and beyond the purely instrumental, but that these need not therefore be described as either ritual or ceremonial, but as concerned with the implicit meanings of these practices, and the underlying theories of infection, as they define the status of patient and surgeon. Traditional humoral theory and asepsis possess meanings which enhance the status of the surgeon, antisepsis equated her/him with dirt. The success of aseptic practice and theory lies not only in its instrumentality, but in defining a moral order of healing in which the surgeon is removed from the plane of polluting Nature to a plane of purifying Culture. Asepsis utilises concepts of dirt and cleanliness drawn from a non-medical sphere; concepts which, as Douglas has demonstrated (1984) define and categorise matter in ways useful to a particular sociocultural order. Things, including bodies in the OT, are classified according to rules of classification of men and women.

The history of surgical sterility has thus shed light on some of the properties of the circuits of hygiene which act to define the social status of the surgeon. Without recourse to any notion of 'ritual' it has been possible to see how, practices which may or may not be instrumental at the level of biology can also have a non-physiological, social component. What the last chapter has indicated is precisely how certain techniques can, not only be instrumental, but also be 'good to

think about'. Because there is an underdetermination of theory by nature, theory choice will rest not only upon the principles of truth, rationality, success and progressiveness (TRASP - to employ Collins' (1981) acronym) but also upon social consequences of the theory at those points where it comes into contact with cultural power, be they within the scientific community (Kuhn 1970) or the wider community (see for example Keller for consideration of the gender-specificity of some scientific theory (Keller 1985: 139 ff); Figlio (1978, 1982) on the effects of capitalist definitions of work and leisure upon medical diagnoses.) A theory which enhances the power of those who wield it will be more acceptable than one which does not, or which threatens to reduce it. (This theory of innovation is pursued in Chapters 8 and 9 in relation to day case surgery.) 'Ritual' is the mechanism by which theory choice is made 'correctly' (i.e. according to custom) despite the under-determination of theory by data. Thus many of the practices carried out in the OT may be perceived as TRASP for the actors involved, and the rest of society, partly because what is going on at a social level in surgery (the 'ritual') is good to think about, because it articulates the authority of the powerful.

However, to return to the themes of Chapter 3, it is not only the status of the surgeon which is affected by the practices that make up the circuits of hygiene: the status of the patient is also affected during her/his passage through the surgical space. This latter status change is the focus of this chapter.

The theory of ritual passage

Sophisticated analyses of status passages have been derived in the anthropological literature from investigation of 'rites de passage' - behaviours associated with social status passage, as described by Van Gennep (1960), Turner (1968) and many others. Given the understanding of 'ritual' as derived above, this theoretical corpus will serve as a starting point for analysis.

The proposition asserted by Arnold Van Gennep in his 1909 monograph Les rites de passage (Van Gennep 1909, 1960) was that many rituals, notably those concerned with the movements of people in space and between groups or the change of a person's or group's status, displayed a common form. This tripartite form consists of an initial phase of 'separation' from a condition or status, followed by a 'transitional' phase:

> The first phase (of separation) comprises symbolic behaviour signifying the detachment of the individual or group from an earlier fixed point in the social structure, from a set of cultural conditions (a 'state'), or from both. During the intervening 'liminal' period, the characteristics of the ritual subject (the 'passenger') are ambiguous; he passes through a cultural realm that has few or none of the attributes of the past or coming state. (Turner 1969:94)

The marginal phase is followed by rites of incorporation:

> In the third phase (reaggregration or reincorporation), the passage is consummated. The ritual subject, individual or corporate, is in a relatively stable state once more and, by virtue of this, has rights and obligations vis-a-vis others of a **clearly defined and 'structural' type;** he is expected tobehave in accordance with certain customary norms and ethical standards binding on incumbents of social position in a system of such positions. (Turner 1969:94-5) (my emphasis)

The emphasis in the last extract exemplifies an essential aspect of the Van Gennep's theory: it is a social structural explanation, not a psychological explanation, of status passage. It is an explication of how status change is managed within a cultural setting, not with the existential significance of this change for the subject.

Another principle of Gennepian theory is that the order in which this tripartite system of rites is conducted is crucial: rites of separation cannot be preceded by transitional or incorporation rites; the order is necessary for the successful conduct of the ritual as a whole, and for the status change to be effective. That having been said, as Gluckman points out, in different situations various of these stages may be emphasised:

> ... thus rites of separation are prominent in funerals, while rites of incorporation are marked in weddings, and rites of transition at initiation ceremonies. (Gluckman 1962:3)

The prominence of a phase in a Gennepian rite of passage imbues the ritual with its social significance for the particular status passage which is to be effected.

Van Gennep's claim was grounded in data from tribal societies, and he identified rites of passage in a far wider range of activities and movements of people than the 'life-cycle' status changes of adolescence, marriage, funerals etc. Within a tribal society, sub-groups created by kin and affine allegiances, or by the division of labour, require that an individual seeking to move bodily in space observe rites equivalent to rites of baptism or ordination. The sub-divisions in these societies were invested with sacredness (La Fontaine 1977:422) and it is not possible for an individual to freely move from one to another. Hence any change in state, such as when a tribe goes to war, or to mark the passage from scarcity to plenty by a harvest festival will be accompanied by rites (Turner 1967:95). Firth has suggested that in Western society also, rituals of greeting must be observed in order that people may aggregate with each other as they move through space and time. Rituals of greeting and parting serve to define the relative statuses of the actors (Firth 1972:31). The complex rules, for example

governing kissing between kin, affines and other allegiances based on friendship, comradeship or hierarchy, serve to display, in a condensed form, the wider rules of interaction permissible to the actors according to their particular statuses. Breaking the rules, intentionally or because of different cultural norms, can lead to confusion or insult to an actor's status, threatening the continuity of social relations (ibid:24-26).

This example demonstrates two further features of the Gennepian rite of passage; firstly, that the existence of rites depends upon the structure of a society - the pattern of events in a ritual needed to effect a particular status passage is culturally contingent upon the rules of interaction and hierarchy in a society. Secondly, that rituals may be perceived by actors as having other functions - La Fontaine notes purification, fertility and protection of individuals as common reasons (La Fontaine 1977:422). Douglas suggests the corollary to this latter point: that any object or experience from everyday life may be adopted and imbued with ritual meaning, indeed 'the more personal and intimate the source of ritual symbolism, the more telling its message' (Douglas 1984:114). Living organisms, and in particular the human body, provide rich sources of symbolism - the parts of the body and bodily products supply symbols of other complex structures (ibid:115); in Leach's example it could be argued that the lips, concerned with the ingestion of food into the physical body, offer by a kiss recognition of incorporation of the other in the social body.[2])

The rites of passage which have attracted the most study, and which have forms in Western society (Bocock 1974:118 ff) are the rituals of the life cycle, particularly of initiation into adulthood or office (La Fontaine 1977; Turner 1967, 1969; Fortes 1962). Here the transformation of status is the purpose of the rite, and is recognised as such by the subject and other actors. Also as La Fontaine notes (1977:422), human beings are

the subject of the rite (as is not the case in rites associated with seasonal change for instance), yet they are manipulated as if they were any other non-human symbol or element in the ritual (ibid:423). In these life-crisis passages, individuals or groups (e.g. age-sets) are moved from an earlier status to a new status by means of some process of initiation, which may involve pain (for instance circumcision or other mutilation) or other bizarre rites of transition - the phase of the rite of passage which is emphasised in initiation rites.

Much interest has been concentrated upon this transitional phase. Turner has drawn from Van Gennep's exposition the notion of a limen or boundary between statuses, and developed the notion of the transitional phase as one of 'liminality', the ambiguous condition which the ritual subjects pass through.

> Liminal entities are neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention and ceremonial. As such their ambiguous and indeterminate attributes are expressed by a rich variety of symbols .... liminality is frequently likened to death, to being in the womb, to invisibiliiity, to darkness, to bisexuality, to the wilderness, and to an eclipse of the sun or moon. .... They may be disguised as monsters, wear only a strip of clothing, or even go naked, to demonstrate that as liminal beings they have no status, property, secular clothing indicating rank or role, position in a kinship system, in short nothing that may distinguish them from their fellow neophytes. Their behaviour is passive or humble; they must obey their instructors implicitly and accept arbitary punishment without complaint (Turner 1969:95).

By these processes the subject is rendered as if to some base material from which they may be fashioned anew, with additional powers in order to enable him or her to perform in the

transformed condition of the new status (ibid:95). Douglas has noted that these transitional states are seen as highly dangerous and polluting, because they are undefinable - neither one thing nor another. Even innocuous rites are surrounded by an aura of danger, and mothers and sisters of initiands are warned to fear for their safety. (Douglas 1984:96)

> But we can be sure that the trumped up dangers express something important about marginality. To say that the boys risk their lives says precisely that to go out of the formal structure is to be exposed to power that is enough to kill them or to make their manhood. .... To have been in the margins is to have been in contact with danger, to have been at the source of power. It is consistent with the ideas about form and formlessness to treat initiands coming out of seclusion as if they were themselves charged with power, hot, dangerous, requiring insulation and a time for cooling down. They are not to be blamed for misconduct any more than a foetus in the womb for its spite and greed. .... all precaution against danger must come from others. He cannot help his abnormal situation (ibid:96-7).

The phase of liminality at once decomposes the old status, and enables the growth of the new. Symbolic tombs are also wombs, the nakedness of the corpse is that of the new-born infant. It is a condensing of opposites which, Turner argues, constitutes the peculiar unity of the transitional phase (Turner 1967:99). But its power, he suggests is also in its economy in presenting to initiands aspects of their culture - of imparting knowledge and hence power, by offering new ways to think about the environment which until then had remained unexamined (ibid:105).

The power of passage rituals

In considering the social structural mechanism of the Gennepian rite of passage two assumptions will be made. Firstly, that the explicit object of the rite is to effect a change of status in an individual or group of individuals. Secondly, assuming that the subject willingly undergoes the change, that in some sense the new status (B) is greater, better or stronger than the previous status (A) (La Fontaine 1977:423). It may of course be the case that the subject is unwilling - for example during the processing of a convict at the beginning of a period of imprisonment, in which case the previous status may be greater than the new one.[3] In all cases, however, the two statuses are unequal ($A \neq B$)

The rites therefore serve to distinguish between the two statuses, and as La Fontaine notes, the negation and reversals of social norms and values in the liminal phase emphasise the social boundaries which are to be traversed. (ibid:422) An individual thus cannot claim new status or rights without undergoing the rites associated with this status passage. The rites thus serve also to exclude as well as enable membership of higher status groups. The experience itself therefore must be regarded as special, and may well include pain or some ordeal of nerve, or an oath of a dangerous kind.

As noted above, Turner has suggested that the power of a rite of passage lies fundamentally in the condensed meaning held in the symbolism of the rite, and concentrated his attention upon the transitional or liminal phase of the ritual, which he regards as exhibiting properties of anti-structure, that is, a reversal and inhibition of the normal rules and moral order of the community. This reversal is still seen in the West in the form of carnival or masque, in which the powerful and the weak have there statuses reversed. This state of anti-structure Turner has termed 'communitas' (Turner 1969:96). His study of

the installation rites of the chief or Kanongesha among the Ndembu illustrates the principles of liminality and communitas; the rite begins with the construction of a small hut some distance from the capital village, known as kafu from Ndembu ku-fwa meaning 'to die'. The chief-elect, clad in a ragged waist-cloth, and accompanied by a senior wife are led to the hut as if they were infirm, where they crouch in a posture of shame or modesty.

The chief and his wife are roughly forced to sit, and Kafwana (a headman imbued with mystical powers) proceeds to deride and chide him for his selfishness, meanness, witchcraft, theft, anger and greed. Then any person who considers s/he has been wronged by the chief-elect may revile him in great detail. After this the chief and his wife are denied sleep, and forced to perform menial tasks. He must not resent this, or revenge himself in the future. (ibid 100-2) Turner concludes that the chief-elect is thus shown to have self-mastery in the face of temptation. He is sexless and anonymous, stripped of his previous and future attributes, he must be submissive and silent, a tabula rasa on which is inscibed the knowledge and wisdom appropriate to his new status. The ordeals and humiliations represent a destruction of the previous status, and a tempering of future inclinations to abuse privileges accorded by status. They are shown that they are 'clay or dust, mere matter, whose form is impressed upon them by society.' (ibid:103) Kafwana's homily points out the chief-elect's desire to possess for himself what is for the common good; he must (Kafwana says) see his privileges as gifts belonging to the entire community, even when he has become a chief, he must still be a member of the whole community. (ibid 104-5)

The mechanism then, for Turner, lies within the symbolic death and re-birth of the individual in a new social status - the focus is upon the individual who undergoes the transformation. However, La Fontaine takes a different position, focusing less

upon the initiand (suggesting that s/he is manipulated just as any other symbol in the rite), and more upon the wider social organisation of the group which utilises rites of passage (La Fontaine, 1977). Consequently she does not share Turner's concern with the liminal and its ordeals or humiliations suffered by initiates to office or status; for her the ordeal is as much part of the process of reaggregation as representative of the liminal period.

In a study of the initiation rites associated with accession to Gisu manhood, she records that between the preparatory period and the day of circumcision there is indeed a festival-like atmosphere in which social norms are suspended - initiands may demand gifts from bystanders, bully or strike their elders with impunity; behaving irresponsibly, as asocial beings free from the rules of society they demonstrate the raw power and strength of manhood (La Fontaine, 1977:426-7). The ordeal of circumcision however is the climactic of the status passage. In the preparatory period the pain of circumcision is emphasised to the uninitiated, indeed it is described as so great as to be uncommunicable. Following the ordeal, the initiands sing songs which tell of the agony, but during the operation they must not flinch from the knife. Afterwards they may claim that had they known of the pain, they would not have dared undergo the procedure (ibid:423-4). Although the circumcision is conducted in public, La Fontaine concludes that Gisu men regard the rite as imparting some secret - but initiates make clear that the secret is the knowledge of the experience itself (ibid:424). What is significant is not what the secret is, but that there is a secret.

The rites are performed in order that Gisu pass through the ordeal successfully - by which is meant with no outward sign of fear or pain during the circumcision. Without these preparations the operation would be regarded as too dangerous. The use of ritual substances, the seclusion of the initiands

all have a practical purpose, to achieve the successful transition. During the operation the initiand stands immobile and is scrutinised and evaluated on his performance during the ordeal. If the performance is satisfactory, the preceding rites are seen as having been successfully carried out, and the society can be assured that the other changes for which the rite has been devised (the transition to manhood) will also be successful. The ordeal, and the knowledge thus imparted, guarantees that the initiate is a man (ibid 430-1). A youth circumcised in a hospital is not thereby made a man, for he has not undergone the ordeal (ibid:425).

As an individual progresses through levels of the hierarchy, more and more knowledge is gained; this knowledge thus separates the different levels, and creates insiders and outsiders, those who share the secret, and those who are excluded from it. By initiating a smaller and smaller proportion to each level, the value of the knowledge imparted is seen as more valuable - hence the value of those possessing it also increases, with the consequence that the hierarchy and the social structure is sustained. Not all initiations need contain an ordeal, in some the initiand will speak an oath or repeat a prescribed formula of promises, by which an individual is bound to a group - these oaths seem particularly binding (ibid:431), however the point is that initiates know what an initiation is like, the unitiated do not. Among the Baktaman the dead are regarded as having the greatest, most powerful knowledge (ibid:425). La Fontaine thus argues that while rites of passage are explicitly concerned with status change, more important is the transfer and vindication of particular knowledge thereby, and hence the acceptance of the authority of the 'wise': those who have passed through the status passages. Their claim to authority is dependent upon the possession of greater knowledge, so the validation of this knowledge by the success of rites of passage supports that authority (ibid:434).

In addition to this re-working of the consequences of rites of passage upon social structure, in rejecting the tri-partite structure of a rite of passage as by itself 'explaining' the meaning of the event, La Fontaine makes two points clear. Firstly, she re-emphasises the social (as opposed to individual) significance of the transformations which occur throughout the life-cycle passages of birth, baptism, marriage, retirement and death as concerned with the allocation of rights within a society. A status passage allocates certain rights to individuals, but it also excludes others from those rights; it is a regulatory mechanism which orders and shapes entitlement. Secondly, she de-emphasises the mystical component of rites de passage in traditional societies. Preparatory rites serve a practical purpose - assuring the success of the status passage - they just happen not to be based upon the kind of scientific ideas of cause and effect which would be more appropriate in Western culture. Secular rites in the West would have some kind of scientific, logical or aesthetic validation to legitimate them.

To take an example from British culture of such a ritual of status allocation: it is regarded as an entirely practical way to test the right of an individual to be accorded the status of a bachelor's degree (inter alia) to set an ordeal consisting of a test of ability to communicate from memory a section of a corpus of information chosen in an unpredictable fashion. Successful passage through this ordeal confers the new status, but also legitimates the authority of those who possess knowledge of how the ordeal is to be successfully performed, while the initiate may well also have conferred upon her/him the right to arbitrate the successful passage of future initiands. The validation of such an ordeal rests on 'scientific' evidence based on pedagogic and psychological theories such as intelligence testing, statistical distributions etc.[4]

In this sense, the rite of passage resembles Galaty's version of ritual, which is concerned less with criteria of 'rationality' than with what may be described as its 'poetic' structure in which the medium is as important as the message (Galaty, 1983:363). Like poems, rituals are texts whose irreducibility to communication invests them with power (ibid:364), so an account of a ritual does not exhaust its meaning, for it is in its performance that the meaning resides. The ritual significance in the wedding service of the words 'I do' rests in their performative ability to transform the individual who utters them from one status to another (ibid:365). Those who participate in this ceremony are not performers in the dramaturgical sense of representing or expressing some aspect of society (the difference in status between single and married), but performers whose acts do transform individuals, and thereby also transform society in the sense that participants are identified with the social order, so in their actions, society acts (ibid:366). A wedding is not an aesthetic representation of the act of marriage, it is that act, as is each and every wedding.

So it is in the performance of such a rite that the integration of the social order is maintained (or more precisely, continually re-achieved.) Despite the changing population of a society, and the biological alterations manifest in its individual members, the structure of a society is sustained. The wedding of two individuals reconstitutes through the use of ritual symbols, particular cultural forms, concerning for example patterns of sexual relations, kin and affine systems such as endo/exogamy and matri/patriliny, and spatial constaints on where people live. All these are consequential upon the performance of the rite of marriage, and each wedding re-achieves these particular cultural forms. (For a description of the ritual symbols and structural forms attaching to wedding cake among Christians and the Nguni of southern Africa see Wilson, 1972:189-196.)

With the benefit of La Fontaine's critique of Gennepian theory of rites of passage,it may also be concluded that each wedding, by its successful performance, validates the knowledge that the cultural forms surrounding the status of the married person are 'right', and thereby legitimates the authority of those who possess that knowledge. A marriage is an occasion upon which wisdom about marriage is communicated, tested and vindicated.

Such 'rituals' of the life course demonstrate the continuity of social structure in the face of a changing, biologically ageing population of individuals. While the apparent resistance to change in traditional societies is not matched in capitalist society, there is a strong degree of continuity of cultural forms. Indeed the continuity of capitalism itself may be considered the objective of 'authority' in Western states; other cultural forms such as family organisation (for example Scanzoni, 1970) or the division of labour (see Davies, 1981 for a description of changes in the sexual division of office work) may be less immutable, and contingent on this over-riding objective. From such a perspective, ritual behaviours associated with life-status resolve the time scale of human labour with the 'longue duree', to use Giddens' (1984) phrase, of social structure manifested in the institutions of capital. Rites of initiation into work (provision with clothing, tools, and certification), and retirement from it (the gold watch), validate methods of ensuring a continuing supply of healthy labour and employment places for it. Enrolment of neophytes in the workplace validate the hierarchy of the division of labour, while enforcing an age of retirement provides a means of exclusion at the top of the hierarchy where increasing age may not assure increased wisdom beyond certain limits.

Within such an analysis, the kind of rite of passage described in this chapter need not be confined to 'traditional' societies. The next section enlarges the earlier debate over the nature of 'ritual' when applied in own-culture studies.

Ritual and Industrial Society

Gluckman (1962) has argued that ritual is most widespread in societies in which there is little differentiation in the division of labour. One person may play many different roles, in work being at one instant a farmer, and the next a fisher; in social relations both a producer, a consumer, a worshipper, a priest; moreover these different roles are enacted on a relatively small stage, so 'the moral judgement on a man who neglects his work as a cultivator applies to his relations with his wife, his children, his brothers, his chief, his subsistence group as a whole. .... if a man quarrels with his wife or his brother this may affect his ability to co-operate in farming' (Gluckman, 1962:27-9). To avoid the possibility that moral evaluation spreads from performance in one role to another, they are ritualized, and rituals are attached to changes in activity.

In Western society, secular divisions of labour segregate roles, Gluckman argues, so that ritual transformation is unnecessary when an individual changes from, say, producer to consumer (ibid:39). Poor performance at work is unlikely to affect moral judgement of a person's marriage or kin responsibilities in capitalist society. Rites de passage associated with changing everyday roles serve to segregate these roles in traditional society; in Western society these are institutionally (and often spatially) segregated, and the etiquette of change of role is largely absent.

> ... the various roles of individuals are segregated from one another because they are played out on different stages. Thus a child matures as he moves out of home to infant school, primary school and secondary school. Each year of his growth is marked by this progress .... he moves, from one room to another. Then in one stream he progresses through higher educational institutions, housed

> in their own buildings, to work as a salary earner; or in another stream he goes through apprenticeship ....into his role as wage-earner. Work goes on in offices and factories, in quite distinctive buildings from those in which most people live, worship, and seek their recreation, or participate in political life (ibid:35).

Factories assemble people from a wide catchment area, as do religious congregations. It is only in close-knit communities where such segregation of roles does not occur; in such communities one might expect ritualisation of everyday life as a means of segregating moral judgements which could threaten social stability (ibid:36). Even in a family business, the son is unlikely to live with his father when married, nor will he seek recreation in the same location - there is still considerable segregation of roles (ibid:47).

This evaluation of criteria for ritualisation is one of a number which have concerned social anthropology. Although, as has been seen above, Bocock (1974) has argued that many aspects of Western society such as sporting and arts events possess ritual characteristics, Douglas (1970) questions this. Using a form of analysis known as grid/group, she suggests that societies in which there is a strong hierarchical structure, high role differentiation, and a developed sense of the boundary of the group will be conducive to ritualism. Where there is free interaction independent of status and little sense of group boundary, ritualism will not occur. This latter category, typified by low grid (rules of interaction) and group (sense of boundary), according to Douglas typifies a free-market economy such as Western capitalism.

It is apparent that explanations of criteria for ritualism will hinge on a definition of what is to be classed as ritual. As Lewis notes it is extremely difficult to provide even a definition: ritual seems to be something which anthropolgists recognise when they are in its presence, yet cannot supply

sufficient criteria to define (Lewis, 1980:8-9). Lewis argues that indeed it is precisely this alerting quality of ritual which is its hallmark; the anthropologist's response 'This is odd. This is ritual. Why do they do it like that? There is more to this than meets the eye. I must try to find out what ...' (ibid:8) is a response which has something in common with the response of the participant her/himself:

> That the rules are not self-evident in the circumstances, but artificial and requiring to be taught and learned, that they gain their validity essentially by reference to tradition, is the basis of that quality which we discern as the arbitary and irrational in much ritual. It alerts us, the observers, as it does those to whom the ritual belongs that they are in a peculiar arena .... where gestures, actions and behaviour may have signifivcance which they would not otherwise have ... which alert the attention and make ritual peculiar, saying "Look and listen", not simply "see and hear" ... becuse we sense the positive alerting peculiar aspect of ritual which calls to us for attention as it does to the performers, but to them more variously and subtly than to us for it comes from within their culture (Lewis, 1980:20).

Yet the anthropologist might be alerted to the peculiar in a culture not because it was a ritual but becuse it was erroneous. Blood letting to resolve a dangerous condition of the humours is not ritual, it is a 'mistaken' belief about physiology (ibid:24). On the other hand a participant might deny ritualism, and impose an instrumental explanation on her/his actions, because the ritual meaning of an act has been forgotten (ibid:37).

Lewis argues however, that ritual's ability to alert may be seen as communicative: stimulating and directing activity in a direction which the authors of the ritual considered important:

> ... the notion implies that in the past some individual or individuals have sensed an idea and tried to tell others about it, perhaps without formulating it other than by showing it in terms of the relations of contrast and juxtaposition between certain things by which it first presented itself to them. The way they did it (perhaps then its meaning seemed clear and overt) so caught the attention of those whom they told ... that they repeated it to preserve it, becuse it caught their fancy even though perhaps later no one could say exactly why this was so ... at some time the doing of it became fixed by rule (ibid:37).

Lewis concludes that in this loose form, it is appropriate to define ritual as communicative, but with the addition that it is something which is not seen, but done, something which through performance enriches and offers a sense of continuity to those whose circumstances have changed from those of the people who first performed the rites (ibid:38).

A recognition of this communicative aspect of ritual is also present in La Fontaine's (1972) assessment as cultural expression utilising symbolic forms (1972:161). However, following Leach, she recognises that technical actions are usually performed in a manner peculiar to a particular culture, and hence also possess symbolic properties.

> Yet if 'technical' acts include elements of the symbolic and expressive, how can the anthropologist differentiate 'technical' and 'ritual'? It is surely a question of proportion. A preponderance of symbolic over technical action (however technical the actors may consider the purpose of the rite) is what marks off ritual from the customary performance of technical acts. There is a continuum of action stretching from the purely technical to the purely symbolic (ibid:161).

La Fontaine thus categorises behaviour as ritual, technical, or into an intervening category in which there is a symbolic element but where this is not elaborated by involvement of social institutions or large social groupings. This intermediate category she calls the ceremonial (ibid:161). The degree of elaboration of the symbolic element is greatest in those rites concerned with what is perceived as the dominance of culture over nature. Hence marriage among Gisu, in which the natural power of a woman is controlled and directed to the social objective of perpetuating society is highly elaborated at a symbolic level, while menarche and first parturition are in the sphere of nature, of women's inherent power, and while marked by symbolic elements are not elaborated, and remain domestic ceremonial rites (ibid:180-1).

> Symbolic elaboration appears greatest at the cultural pole. This would seem to be because symbols generate power and the greater the symbolic elaboration the greater the power. This power is directed to a specific purpose - it is intended to achieve .... a change in the state of an individual. .... For women culture marks out stages in their progress to maturity and surrounds the natural events with symbolism, which both defines their social significance and brings the natural power of women under men's control as it develops (ibid:181).

Symbolic elaboration ('rites') of aspects of a status passage, La Fontaine concludes, is the means by which Gisu culture underlines the significance of related oppositions, and ensure man's (sic) control over nature (ibid:184). Ritualisation, according to this development of the theory of rites, might therefore be expected to occur in circumstances where the natural or physiological needs to be demarcated from the cultural, or to put it another way, <u>when a cultural definition needs to be emphasised despite potential confusion or contradiction from natural data.</u>

To return to the status change surrounding initiation into adulthood. Among the Ndembu the boys' initiation rite does not accurately correspond with pubertal changes. Indeed, because the rite may not take place for a number of years (up to ten years in one vicinage reported by Turner (1967:182), some initiands may be obviously biologically mature, and chronologically considerably older than others who are also awaiting initiation. Potentially then, there is a contradiction - some boys who might be considered biologically able to adopt the responsibilities and rights of manhood, for instance entrance into the hunting cults (ibid: 1967:8) are equated with younger and pre-pubescent boys. The rites of passage act to over-ride these 'natural' categories by cultural categorisation of those initiated and uninitiated, clearly defined by the difference between circumcised and uncircumcised,

> ... relationships which stress likeness rather than interdependence as the basis for classification. Mukanda (the rite of initiation) has the prominent characteristic of expressing ... not the unity, exclusiveness and constancy of corporate groups but rather such widespread classes as men, women, elders, children, the married, the unmarried and so on. Such categories cut across and interlink the memberships of corporate groups. In a sense they represent, when ritualized, the unity and continuity of the widest society (ibid:264-5).

As Turner goes on to note, these categories are socially constructed in that they possess moral characteristics. Children are partially feminised by contact with their mothers, while by circumcision boys are transformed into purified members of the male moral community, able to take their part in the jural, political and ritual affairs of Ndembu society (ibid:266). Hence the rite of passage, or status passage, re-interpreting Turner's analysis, is a celebration of the dominance of cultural definitions over those based in biology.

To take another example from Turner's exhaustive ethnography of the Ndembu, the condition of female barrenness (which appears to include miscarriage or perinatal mortality) is resolved by rites of Isoma - the name given to the manifestation of a shade of matrikin (Turner, 1969:16). Although Ndembu society is matrilineal, it is virilocal - women move to their husband's village on marriage, leaving behind her matrikin who form the core of her original village. By means of the rites of Isoma, the woman 'remembers' her matrikin, both living and dead, who she has 'forgotten'. Once her primary allegiance to her matriliny has thus been recalled, a woman can continue to live away from them in her husband's village. Barrenness thus represents a crisis by which the contradictions of matriliny and virilocality come to light. This contradiction surrounds the continuity of the village itself, for there is no rule as to where children of a marriage should reside, in their father's village, or village of their mother's lineage, and there is therefore a constant struggle between a woman's husband and her brothers as to the residential affiliation of her children (ibid:12). Once again taking La Fontaine's formulation, Isoma represents the victory of cultural norms (virilocality) over that perceived as natural (matriliny), in that they permit a woman to continue living with her husband (ibid:13), and are demonstrated to have been successful by the end of barrenness and the raising of a child to toddling stage (ibid:14). They are in effect structurally equivalent to initiation of girls into womanhood (ibid:21).

With such a formulation it is possible to hypothesize that ritualisation will occur whenever the cultural definition is to be raised to dominance above one deriving from biology or the 'natural'. It has been seen that life-cycle rituals (usually in a tri-partite form) are performed, with varying degrees of elaboration in the public arena, in traditional societies, and there is a wealth of ethnographic evidence to support this[5].

In industrial society too, these life-cycle rituals occur, the most obvious being those concerned with marriage, christening and death (Bocock, 1974; Frankenberg, 1966). Coming-of-age, engagement and retirement celebrations also possess some characteristics of rites of passage, although these remain largely unelaborated and would be considered 'ceremonial' in La Fontaines's (1972) schema. All possess aspects of the victory of cultural definition over nature/biology; or to put it another way the victory of the group interest over the individual, and defines the timescale of the social structure rather than of the individual agent as primary.

It is worth digressing briefly, taking the example of marriage to investigate this proposition. Marriage is particularly interesting as secularisation may occur without disruption to many aspects of the proceedings, which adhere very closely to the model of a rite of passage involving movement and a tripartite formula. Marriage may be seen as the nodal point which marks the continuity of a community from generation to generation. The unmarried will live with parents, and possess no economic or social rights to control of the familial home. On marriage a new homestead is created, in which the husband and wife will have economic rights of control. Where property is also the means of subsistence, as in the farming community, Frankenberg notes that the son is transformed by marriage into the incumbent of a cluster of roles: husband, father, controller of the productive unit, centre of friendship, kin and co-operation (1966:55). The pattern of previous generations is thus repeated, and the groundwork laid for its future repetition by production of yet another generation. Traditionally, the woman will change her surname to that of the husband, thereby identifying her (and in time, her children) with this new unit of the community, and separating her from her previous unit.

Marriage of course has many other consequences which have been noted by functionalist and other sociologists[6]; it legitimates

sexual relations which may not be fully acceptable in the unmarried, it defines and reproduces particular modes of sexuality and represents commitment to permanence and monogamy, it also has many social consequences in cementing links between affines and also between kin such as mothers and married daughters (Frankenberg, 1966:188), it acts as a unit of consumption in capitalist society, and institutionalises the reproduction and production of labour power (Engels, 1968). The present analysis articulates with some of these suggested functions, but starts from a different position from either marxist or functionalist analysis by considering the principal contradiction to be between two alternative views of the individual, the first concerning the 'natural body' with its lifespan based in physiology, the second being the notion of the socialised member of society through whom a 'timeless' or cyclical social structure is mediated and reproduced. The ritual qualities associated with the transformation from one social status to another, from unmarried to married, emphasises the cultural pole over the natural, the continuity of society over the inevitable transitoriness of the individuals who participate in this life-cycle rite of passage.

The rituals of marriage thus are not concerned with celebration of sexual potency, or of individualistic aims of separation from restrictive parents, in fact these aspects are largely excluded from the rite - inter-generational squabbles are suppressed; the supposed sexual capabilities of the bridegroom are described graphically in the ritual of the best man's speech, but in the past tense and as a comic interlude. The ceremonies emphasise continuity, and the exaltation of the couple into the institution of married society.[7]

This digression has demonstrated that in Western as in traditional society, rites of the life cycle emphasise structure - cultural, timeless continuity - over the biologically embodied, finite individual. At moments in the life-cycle where it is

most important that human beings mediate and reproduce social structure, rather than individual interests centred on the body, the rites of passage associated with that life-cycle stage will be elaborated in a more or less public manner. Others which are less explicitly concerned with the structure of society (because they do not identify a crisis in the contradiction between the timescales of agency and structure) will remain unelaborated. As has been seen marriage falls into the former category, death and mourning - the exemplary crisis between the finite individual and timeless or cyclical structure also is an elaborated rite. Menarche and pregnancy, the religious ceremonies of confirmation and first communion have little relevance to the social structure of industrial society, and are not publicly elaborated. The life-cycle stage of retirement from work, which might be considered important, to ensure continuity of the workforce at the expense of the individual whose powers may still be adequate for work, is relatively unelaborated, and may be an aberrant case worthy of consideration elsewhere.

To summarise the argument thus far:

1. Rites of passage are social processes by which the movement of an individual or group from one status to a status which is better in some way serves to legitimate certain knowledge.
2. Ritualisation will occur when individuals carry out a multiplicity of undifferentiated or overlapping roles. In industrial society the division of labour has led to under-development of rites of passage other than those associated with the life cycle.
3. Rites are elaborated when they are concerned with the imposition of a cultural definition on a contradictory natural one.
4. Life-cycle passages resolve the contradictory timescales of the biological individual with that of social structural institutions.

From this analysis it is now appropriate to consider the applicability of this refined version of the theory of status passage as associated with the life-course, to illness and healing.

Illness, healing and status passage

Herzlich has noted that while 'the subjective experience of health represents integration in society through activity, the experience of illness brings exclusion through inactivity' (Herzlich, 1973:92). This is in a sense the corollary of the Parsonian analysis of sickness which has been assessed in the opening sections of this work; it identifies the individual response to the limitations which ill-health brings, even before accession to the sick role re-integrates the social rights and responsibilities associated with deviation from the norm of health.

Both inactivity and lack of integration in society may of course be sometimes regarded as attractive to the deviant, and the value of the Parsonian analysis is in identifying ways in which the sick-role counters these 'secondary gains' (Parsons, 1951), or as Hart puts it 'role obligation evasion', which could 'infect' others (Hart, 1985:97). It is reasonable to assert however that illness (status A) will subjectively be seen as a negative category in relation to health (status B) for most people. The act of seeking a remedy, either by self-healing or attending a sanctioned healer, of itself may be assumed to indicate such an assessment of the relative values of the two statuses (A < B).

If that is the case, then it is also the case that the restoration of an ill person to health will also reflect this evaluation of A < B. The act of healing is therefore a transformation from status A to a new 'better' or more valued status.

It is tempting to assume, and this is one of the assumptions behind the sick role model of Parsons which has led to its critique (for example see Freidson, 1970; Gallagher, 1976), that the new status which the act of healing achieves is status B (health). In this case one might say that healing involves a status passage from Illness to Health.

However, clearly in many cases healing does not restore the individual to the full state of health enjoyed prior to the episode of illness. Chronic illness resulting from hereditary or environmental factors is an immediate example in which return to status B is not achieved by healing. Illnesses such as schizophrenia, venereal disease and arguably cancer, which in theory may be 'cured' in the sense that symptoms are removed, are stigmatising - they label the former sufferer, preventing her/him from full accession to the previous status of health. So the new status which follows healing cannot necessarily be assumed to be status B, indeed in many cases it will not. The new status is intermediate between A and B, it may approach B, and even coincide with it in terms of its value, in principle it might even be greater than B either at a biological or at a cultural level.

This latter point is interesting, for it recognises that the status of an individual's health may be quite different depending on whether it is being evaluated at a biological or a social level. Strictly speaking of course all evaluations in terms of 'biology' or nature will have been encoded via the social, and may well reflect sociocultural factors (for example see Turner (1987:14) on tendosynovitis and other diseases with a socio-political dimension); indeed it would be a tenet of the anti-positivist approach of this work to reject any absolutist definitions of 'health' or 'illness'. Fortunately it is possible to side-step this difficulty and for analytic purposes merely 'bracket' biological reality - the status transformation which is of interest is at the cultural level.

It would therefore, even disregarding the problems of chronic and stigmatising illness, be quite inappropriate to name the pre- and post-healing statuses A and B simply as 'Illness' and 'Health'. At the cultural level, that is, at the level at which meaning and value is ascribed to the two statuses, these states are relational, the post-healing state being prized as superior to the prior status. At a biological level, circumcision among the Ndembu is in no sense a biologically important passage from Illness to Health. At a cultural level it is the case that the operation is given meaning by reference to the dirt associated with the uncircumcised organ, which makes the uncircumcised polluting ('wunabulakatooka' - one who lacks whiteness or purity) (Turner 1967:153-4), but the significance of the operation exists only in terms of its performance during the rites of initiation from boyhood to manhood. Similarly, the superior nature of the post-healing state is precisely due to the fact that it has only been achieved through the technique of healing; being in that state means that an individual has been healed.

There is another reason why at the cultural level healing is not simply a matter of re-working the patient from a status of Ill to one of Fit or Well. As was seen in Chapter 5, no patient except the entirely moribund is entirely Ill, s/he still possesses some Fitness - indeed this balance identifies the extent of the Illness, and is of crucial importance in surgery, as was seen in the chapter in this study on the relationship between surgeons and anaesthetists. Rather, healing is concerned with a re-working of the **interaction** between these two aspects of the patient. The passage is from one particular dialectic of Ill and Fit which in its deviance is a dangerous, socially threatening and negatively evaluated status, to a new relationship between Ill and Fit, which **by the sanctioning of the healing process** becomes socially safe, and positively evaluated.

Why is the previous status culturally dangerous? To answer that question it is necessary to return to a consideration of the contradiction between the cultural and natural timescales of a society and its members. As has been seen, stages in an individual's life-cycle are marked by rituals which serve to impose the cultural timescale over that of individual biology. The old are revered for their knowledge, and seen as exemplars of the continuity of society, not as exemplars of the mortality of all individual members of that society. At each stage in the life-cycle the definition of biological time (mortality) is substituted with the cultural definition (continuity). In such a way the institutions of a culture achieve continuity despite their mediation and reproduction by individuals whose own continuity is illusory.

To fall ill is to recognise the illusory quality of individual continuity - it is to be suddenly conscious of time passing inexorably, and in one direction, toward extinction. As such it is a threat to institutional continuity, for individuals self-conscious of their own mortality may not be willing to mediate and reproduce the structures which can exist only through their agency (Giddens, 1984), yet which will thereby outlive them. Bury has suggested that diagnosis of a chronic illness leads to serious biographical disruption, it forces attention to bodily states and to taken-for-granted assumptions about a lifespan trajectory which follows relatively predictable chronological steps (Bury, 1982:169-171). However, why should this occur only where illness is diagnosed as chronic? Two entirely different processes are here being conflated; firstly the onset of the 'biological' deviation, secondly the labelling of this deviation at the level of culture. This second process will start with immediate attempts at self-diagnosis, based on perceptions of deviation from normal sensation. Assistance in explanation of the deviance may then be sought from a range of lay and sanctioned sources. This may be regarded as the first stage in the process which here will be designated 'healing'.[8]

The patients in Bury's (1982) study of chronic illness, as opposed to those experiencing acute episodes, are not only adopting a diagnosis of rheumatoid arthritis, but also a prognosis. The diagnosis attaches not only a label to the biological deviance, but also a cultural label concerning the biography of the individual, or more accurately, a modified timescale within which the individual may act. A diagnosis of chicken pox or a broken bone on the other hand, will usually carry with it a prognosis that does not modify or adversly affect an individual's timescale, and does not thereby bring her or him into conflict with the timescale of social structure.

This procedure, which could be referred to as 'dia-prognosis', thus possesses two quite separate features. Firstly it identifies the individual as in a dangerous condition, 'ill' (status A) whereby biographical or life-cycle expectations are disrupted. But secondly it initiates the process by which this danger is made safe, that is, the process of 'healing'. Healing may be defined as **the restitution of a perception of congruence between the apparent continuity of the body and the continuity of social structure.**

Healing thus begins by labelling a deviance, and thereafter achieves, by its particular procedures, a re-labelling which makes the deviance safe, it 'de-fuses' it. Its success will depend on the fulfilment of two conditions; firstly, that the healing is conducted by a person who is socially sanctioned, be they 'lay' or professional. (There is really no meaningful difference between these categories from the point of view of this analysis: 'lay' is merely a pejorative used by 'professional' healers.) Secondly healing will normally require some treatment in addition to dia-prognosis. The form which this treatment takes will be culturally determined, and may or may not, from the point of view of science, be effective in resolving the biological deviance.

Comaroff (1976) has noted the extent to which placebo therapy is used to heal in Western medicine. Consultations in the GP surgery which do not end with prescription are seen as somehow unsatisfactory, even when the doctor assures the patient that the illness episode is self-limiting and temporary. Placebo use is less concerned with issues of efficacy, she concludes, but primarily due to the obligation to provide treatment, which in the case of general practice normally entails chemotherapy (Comaroff, 1976:92).

To return to Bury's study of people with a dia-prognosis of arthritis, the 'chronic' label must be seen itself as part of the healing (in the sense adopted above of restitution of congruity between body and structure), despite the admission of the healer that not only is no cure available, but the cause is itself unknown (Bury 1982:173). Unfortunately the study does not indicate any of the ways that this label re-integrates, for example, as Szasz and Hollender (1956) have noted, it may lead to a different model of doctor-patient interaction from the active-passive model found in most acute illness. Patients may be encouraged to join self-help groups, or advised to seek help from 'complementary' or paramedical practitioners (Wharton and Lewith, 1986).

It must be emphasised once again that this analysis is explanatory at the level of culture, not biology or psychology; at the level of the group, not the individual. It is not being suggested that healing acts to somehow change patients' psychology so that they believe themselves to be immortal. Rather, the regimens of healing are public demonstrations of the victory of culture over nature. (As Helman notes, outside the Western world, healing normally takes place in public (Helman, 1984:133), his proposition that Western healing occurs in private might be considered as being at odds with some of the experiences of patients of hospital medicine (for example Fairhurst, 1977.) Foucault (1976) has remarked upon the medical

gaze cast over patients, as typified by the architecture of the Nightingale ward.) **Healing performs a status change upon an individual, but thereby enables restoration of communal faith in the continuity of society.** Just as marriage, christenings and funerals restore the sense of continuity of society despite the obvious change in the personnel who constitute it and fill its roles (wife, husband, child, parent, worker, consumer, dead ancestor etc), healing resolves the 'serendipitous' appearance of conflict as a result of deviation from the norm of health. The sanctioning of the healer, as Parsons has noted (1975:266) is thus crucial, for s/he not only treats the private pathology of disease, but holds public office which carries with it the message that culture is superior to nature. Furthermore the sanctioned status of the healer prevents the possibility of the patient being in a position to question the efficacy of healing, undermining the (social) success of the status transition.[9]

As has been seen above, processes which involve the imposition of a cultural definition upon a natural one will tend to possess elaborated ritual characteristics. It is therefore to be expected that healing, both in traditonal and industrial society will have public elaboration surrounding it. Helman has remarked upon the extent to which Western medicine possesses characteristics of rituals of social transition, particularly in relation to hospitalisation:

> A patient admitted to hospital leaves his normal life behind, and enters a stage of limbo characterized by a sense of vulnerability and danger ... Their clothing is removed and replaced with a uniform of bathrobe and slippers. In the ward they are allocated a number, and transformed into a 'case' for diagnosis and treatment. When they have recovered they regain their own clothes and rejoin their community in the new social identity of a 'healthy' or 'cured person.' ... hospital treatment ...

follows Van Gennep's three stages of separation, transition and incorporation (Helman 1984:132).

The processes of 'stripping' of identity which occurs in 'total institutions' such as hospitals and prisons has been documented by Goffman (1968). The comradeship of inmates in this transitional state bears close resemblance to the camaraderie of initiands as described by La Fontaine (1977), Turner (1967). Hart notes that this stripping sweeps away 'personal social characteristics which get in the way of diagnosis' (Hart 1985:107). There are clearly aspects of the liminal to the process of hospitalisation.

However there are a number of problems with making such a staightforward equivalence between hospital treatment and rites of passage. A coach journey also entails severe restrictions of normal behaviour, and what is more involves movement! A week at a holiday camp also possesses superficial attributes of the rite of passage. However it would be clearly inappropriate to designate these examples as such, and similarly, so long as hospital treatment is considered as concerned with the individual patient, neither should it be regarded as a rite of passage. To do so is to reduce the analysis to the proposition that everything has a beginning, a middle and an end! (Gluckman 1962:9)

This leads to the second difficulty, in Helman's suggestion that the status change involved is from 'ill person' to 'cured' person (Helman, 1984:134); from A to B in the designation applied earlier in this chapter. It has been seen above that in many cases the status of the person who has undergone healing is <u>not</u> equivalent to health (B) at all. Indeed, in the case of the chronically ill or degenerating patient, treatment may be quite ineffective biologically. As Parsons has remarked (1951:442), and the fieldwork in this study also records, the burden of treatment may be very severe, including the risk of

death, temporary or permanent disablement. In the case of elective surgery, most patients may be discharged far 'iller' than when they entered hospital. The status change which is invoked (regardless of any biological improvement in the health of the patient) is at the level of culture, and new terms are needed to describe the transformation that healing effects.[10]

The earlier status (A), the consequence of dia-prognosis, it is suggested (to signify the apparent unfairness of affliction) be designated as the status of 'Victim', a terminology not dissonant with its emic connotation, and historically synonymous with patienthood (OED s.v. 'victim').
The status following healing (B) it is suggested be typified 'Survivor', again with the emic connotation of having 'passed safe through' (OED s.v. 'survivor'). The relationships between these cultural statuses and the biological states is indicated in Figure 7.1.

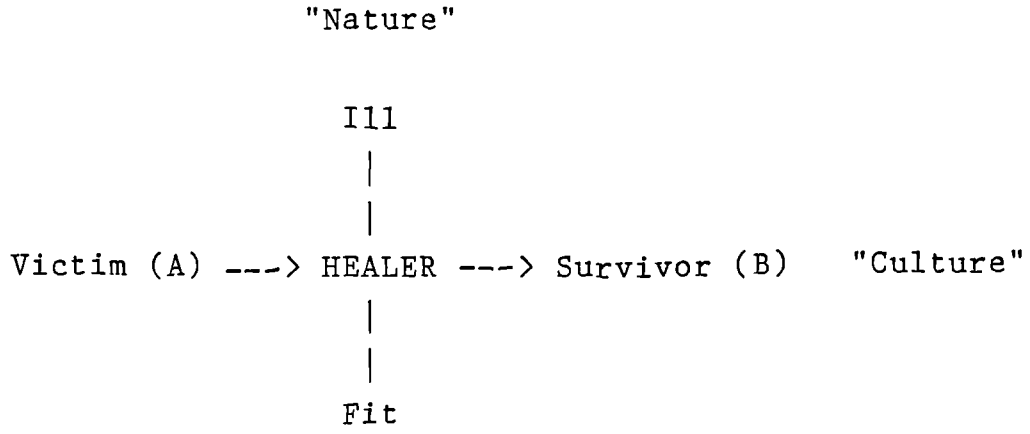


Fig. 7.1: Cultural and Natural statuses.

As may be seen from the figure, the change in cultural definition of status from victim to survivor is orthogonal to the biological state - no physiological change by which the fitness of the patient is enhanced is required or necessary for

the transition to be successful. The transition is not for the benefit of the patient, but to restore equilibrium to society; the survivor has, by the intervention of culture, been re-born in a new social role 'right' for her/his position.

Whereas the 'victim' had a grievance, and could ask 'Why Me?' of her/his affliction, the survivor has undergone the sanctioned healing prescribed by culture, and is no longer a public example of dissonance between an individual timescale based in nature and the timelessness of culturally constructed social structure. In her/his new status of survivor, which by definition is 'better' than the previous status, the former victim has new responsibilities and rights. To some extent these will depend upon the physiological outcome of the healing, so that patients who although 'survivors' do not physically respond may lose various social rights accorded to adults, thus disabled people may be assumed to be mentally deficient or deaf (Hilbourne, 1973:497). Some further consequences of this formulation are examined in the final chapter, but first it is necessary to assess the model in the light of the data from the historical and ethnographic studies of surgery reported here, and comparative studies from non-Western societies.

Applicability of the model to illness and healing

A number of studies have provided information upon rites of affliction in other cultures. It is usually argued that in non-Western cultures explanations of illness serve to resolve not only the manifest physiological problem, but also a latent disturbance of social relations (Helman, 1984:133). The ascription of ill-health to causes such as witchcraft brings out tensions or conflict within the community, treatment of the illness also enables these tensions to be resolved (ibid:136). In this respect it differs from illness and treatment in the West.

This generalisation needs to be qualified. Among the Gnau of New Guinea, the sick person withdraws and by show of sickness puts on others the obligation to restore her/him to health and thereby enhances a sense of community (Lewis, 1975:335). The search for meaning in deriving the cause of the illness focusses attention on knowledge, beliefs and rules of social organization based on sex, age, marital status and achievement (ibid:336-40). Cause is usually attributed to food and gardening, work, or spatial organisation within the village (ibid:352), as such it asserts a moral order on relations and cultural rules. However attribution to disturbed social relations per se is uncommon, rather it is manipulation of cultural rules to defeat the whims of nature which is the basic of Gnau interpretations of illness (ibid:359).

The rite of liengu among the Bakweri of the Cameroons (Ardener, 1972) is enacted to cure a seizure which characteristivclly affects a woman causing her to faint over the fireplace, knocking out one of the stones supporting the cooking pot. The liengu doctor (usually male) kills a black cock and sprinkles it blood in the hole left by the displaced hearth-stone.The woman is then secluded in a hut, taught the secret liengu language and given a new liengu name. After several months she is taken and submerged in a deep stream, where she becomes a familiar of the water-spirits which caused the seizure. Subsequently she is immune from further attack from these spirits. Ardener suggests that while from a male perspective this is a medical rite, from the women's viewpoint liengu is a resolution of the contradiction of living both in a culture (defined by men) and in nature (the water-spirit world). He draws attention to conflict deriving from the Bakweri double descent system, which defines through the male line issues of property (culture), and through the female line issues of fertility (nature); liengu rites are at once both medical and concerned with resolving the contradictions faced by girls

about to enter marriage between their perceived 'wild' nature and their subordination by men (Ardener, 1972:153).

Ngubane (1977) found the characteristic tri-partite structure of a healing rite among the Zulu. Medicines appear to possess properties contingent upon colour in this system of treatment; black medicines (which are associated with death) are given first, followed by red and then white medicines. White medicines are to do with life, red possess aspects of both death and life and represent the ending of a negative state (illness) and a new beginning (Ngubane, 1977:127-8).

Turner witnessed many rites associated with healing among the Ndembu. Nkula, a rite concerned to make a barren woman fertile, he notes is etymologically related to the word for 'to mature', a word also attached to women's various passages through menarche, first pregnancy, multiparity and menopause. The felling of a tree and the sacrifice of a cock Turner *suggests* symbolise the cutting away of the masculinity of the barren woman, returning her to the role of normal wife (Turner, 1968:86-7). The rite of Ihamba, concerned with the casting out of an affliction caused by a displeased ancestor, displays the feature comon to other rites, that the subject, having passed through the rite, becomes an adept, and may himself become a practitioner of the healing (ibid:197). Turner concludes that:

> .... the typical development of a ritual sequence is from the public expression of a wish to cure a patient and redress breaches in the social structure, through exposure of hidden animosities, to the renewal of social bonds.... (ibid:272)

He argues that as with other rites of passage among Ndembu, rites of healing resolve the specific tensions in that society resulting from the contradiction of matriliny and virilocality, as well as other pressures from modernisation (ibid:273).

The intention in this section has thus far been to draw on examples from other cultures to consider how healing not only concerns itself with resolution of biological deviance but also with the re-assertion of cultural definitions which are threatened by circumstances arising because individuals deviate from these rules of culture. The use of other culture examples assist in making strange, but now it is necessary to return to consideration of the applicability of the model of rite of passage to healing in the Western surgical context. To recapitulate, the model would predict that surgery would possess particular characteristics:

1. It would have elements of the classic tripartite structure.

2. It would be concerned with an imposition of a cultural re-definition of a patient's illness so that s/he would be seen not as a victim but a survivor, and that this latter status be better or higher than the former.

3. It would mark the superiority of culture over nature.

4. Endurance of the ordeal would be seen as proof that the change in status had occurred.

5. The post-surgical patient would be seen as possessing new rights and responsibilities deriving from the knowledge of the passage which has been imparted to her/him.

6. The successful passage to the new status would legitimate the knowledge by which the procedure is enacted, and the rights of the practitioners to conduct it.

Discussion: surgery as status passage?

This chapter has, thus far, considered in considerable detail the data and theory relating to the anthropological model of the rite of passage, not only in pre-industrial societies but also in Western society in relation to life-cycle status passages such as marriage. The logic for elaborating this particular model lies in the findings of the three previous chapters which have implicated surgery as concerned not only with altering the biological state of the patient, but also with re-categorising her/his social status. The ethnographic data presented in Chapter 3 concerning the 'circuits of hygiene' was strongly suggestive that the procedures conducted within the operating theatre suite conform to a tri-partite structure of separation, transition (liminality) and reaggregation. This structure is bolstered by many techniques unique to surgery (in addition to the transgression of taboo boundaries as a consequence of resection): designation of a particular area, anaesthesia and sterile practice - which accentuate some of the processes of identity stripping associated with hospitalisation in general.

At a banal level it was therefore the case that surgery had adopted a tri-partite structure (point 1 in the previous section) and to that extent corresponded to the structure of rites described by Van Gennep. On its own this evidence is however far from conclusive that the model of a rite of passage is appropriate to surgery, as the elaboration of that model in this chapter has demonstrated. The crucial requirements to be fulfilled are not to do with structure, but with the significance of the process at a **societal** rather than individual level. Point 2 - the imposition of a socially determined status; point 3 - the elevation of culture over nature, and point 6 (following La Fontaine) - the legitimation of socially important knowledge and authority; these are the essentials to be met if the model is to be appropriate.

Chapter 4 evaluated the historical roots of sterile technique and demonstrated how the structure of the theory of asepsis condensed important meanings at the level of the moral order and the relations between patient, surgeon and nature. The surgeon becomes a representative of culture, and through her/his authority to enact aseptic purity demonstrates superiority over nature in the form of the polluting environment. The successful carrying out of the techniques of asepsis is demonstrative at the societal level that the status passage has been effected. The successful passage to the new status in turn legitimates the rights of the surgeon to conduct the passage, and in turn her/his knowledge is legitimated. The chapter concluded that sterile practice was not only concerned with bacteriology, but was also an important focus whereby surgery is socially empowered to effect the passage of healing.

In chapter 5 consideration turned to the interactions between anaesthetist and surgeon. Data from the field setting and interviews derived a model of the peculiar conflict and co-operation involved in the interaction of these protagonists, based around their mutual interdependence and their contradictory definitions of the patient as possessing both Illness (surgeon) and Fitness (anaesthetist). The consequence of this dual definition is to enable surgery to impose a culturally-defined evaluation of the 'success' of the healing properties of a surgical operation quite independent of its physiological outcome. The trade-off between Fitness and Illness, conducted in controlled surroundings in which both surgeon and anaesthetist have a moral authority for their particular definitions of the patient ensures the 'success' of surgery at a social level. Its success in turn legitimates the authority by which the protagonists conduct their healing. Only (as in the case study of the meningioma patient) where one of the participants loses her/his moral right to practice, is the power and authority of surgery compromised.

Anaesthesia is therefore not only important in its dramatic definition of the liminal phase of a patient's passage through the OT, but as another focus by which surgery demonstrates its social empowerment to define the patient as possessing new status post-operatively. Despite possibly serious compromise to Fitness, a post-operative patient is socially a survivor, not a victim of her/his Illness, surgery has enacted this (social) transformation, and in so doing has legitimated socially important knowledge about the relationship between the individual and the society, and the authority of socially sanctioned healers to make visible this knowledge through imposing the change of status on the patient.

This leads the discussion to the precise content of this socially important knowledge. It will be recalled that in many of the rites of passage documented in this chapter, the significance of a status change lies in the imparting of more or less secret knowledge to the initiand. What is the knowledge that is imparted to the 'Survivor'? And for that matter what new rights and responsibilities (if any) does the post-surgical patient have?

S/he certainly does not have the right to become an adept in surgery, as does the Ndembu who has passed through the healing rites. One right which does appear to be accorded in our society is the right to set up organisations of 'ex-patients', especially amongst groups of survivors of chronic diseases. These patient support groups possess rights to advise 'victims', and could be seen as performing part of the ideological role of transformation to 'survivor'. This topic is worthy of further study. Some rights: to knowledge about the experience of surgery and the instruction of pre-surgical patients, which are accorded to post-operative patients recovering from their surgery have also been noted (Clarke n.d.).

The knowledge which is imparted is simple: it is the knowledge that society has the right to define the individual's life course. The victim is the individual who asks "Why me?" when presented with a dia-prognosis which conflicts with previous expectations of passage through the life-course. Sanctioned healing, in this case in the form of surgery, while using the metaphors of physiology to enact its processes, imparts the societal message that these expectations are not immutable, but contingent on cultural definition. Just as circumcision defines arbitrarily the putting aside of childish things and accession to adult responsibilities, healing sets new limits on quality and quantity of life, re-defining the individual's life-course, categorising her/him as a survivor with no right to ask "Why me?" and new responsibilities to society in terms of work and dependency. Healing is the re-integration of the deviant victim in a new culturally-defined role. The foci of power in healing act to impart socially constructed knowledge which obviate disruption by individuals who can no longer reconcile their own (threatened) life-span with the durability of social structure.

Conclusion and new hypotheses

This chapter has been concerned with providing a theoretical framework to describe how the social power and prestige of surgery is mediated through the day-to-day activities in the OT which the research has been concerned to disclose through ethnography, interview and historical research. From the simple observations concerned with movements of patients instruments to staff to the analyses of the imposition of cultural over natural definitions through the media of asepsis and anaesthesia, a congruity between the structures of surgical procedure and rites of the life-course and of healing described by anthropologists studying pre-industrial societies has been noted. For this reason there is a strong argument for assessing surgery's social impact in terms of this model of social status passage, with its emphasis on legitimation of authority.

There are a number of consequences of such an application. Firstly, in considering a form of healing conducted in a Western society, an assumption is implied about the continuity of structural forms between pre-industrial and Western societies, an assumption which has been resisted by some of the writers mentioned in this chapter to lesser or greater extent. The analysis has therefore sought to sidestep this issue. As was noted at the outset, to speak of ritual or ceremony as applied to the secular or scientific is to invite difficulties of definition, of analogy and of culture-boundedness. For example many of the 'rituals' of the operating theatre described by Katz (1984) would be analysed in terms of 'routinisation' by sociologists of work and the professions (for examples in the medical setting see Johnson, 1977; Larson, 1979; Portwood and Fielding, 1981; Davies, 1983; Freidson, 1983; Haug, 1983). Such formulations were therefore resisted - rather than imposing the label of 'ritual' on practices, possibly contrary to the meaning of these practices for the participants, the symbolic significance of practices was sought in terms of their structural properties in relation to cultural context.

Thus the processes of surgery were related to the social structure of capitalism, and meaning was sought in terms of the differing time-scales of the individual and of social structure in Western society. In concerning itself with legitimation of authority and knowledge, this model from social anthropology asserts the significance of surgery at the level of ideology. This important re-working of the relation between medicine and social control will be fully considered in the final chapter.

Secondly, and consequent on the last proposition, surgery is no different from any other form of Western healing in performing the social function of status change from victim to survivor. All that is specific to surgery is its explicit symbolism.

Surgery has adopted techniques which enhance the outward characteristics of the rite of passage, its tri-partite structure, its movements through space, and use of unusual techniques of cleaning and anaesthesia. But other healing may possess some of these elements also. It is a prediction from this chapter that the power and prestige of medical specialties will reflect the extent to which their techniques enhance the cultural re-definition of their patients from victim to survivor. Both anecdotal and academic evidence that surgery, paediatrics and orthopaedics are high status while community medicine, psychiatry and geriatrics are low in prestige (Hart, 1985:126) support such a prediction from the model.

The final consequence concerns the various peripheral activities associated with surgery. It has been proposed in this chapter that a sociology of surgery is to be constructed and the power of surgery understood, in terms of a model of surgery as status passage. If this is so, then the social organisation of surgery will reflect this model at all levels, emphasising the over-arching importance of the techniques by which status change from victim to survivor is mediated, and surgical authority legitimated.

This hypothesis provides the opportunity not only to consider more aspects of the surgical enterprise, which thus far has been confined to the OT, but also, following the methodology of analytical induction (Mitchell, 1983) a means by which the model may be tested and if necessary, refined. To this end, of testing the model, three case studies will be considered in the next chapter.

For example, it is a prediction from the model that surgeons performing their duties outside the OT, on the wards, will behave in ways which will enhance the cultural definition of surgery as the all-important limen defining a patient's status as victim or survivor, downgrading all pre- and post-operative

activity, and non-surgical interventions. The first case study will therefore be based on data on surgeons' interaction with patients in the ward setting.

Surgery is one specialty to be incorporated within a wide range of healing conducted in a hospital, and as such is subject to management interventions. A second case study will look at the administrative organisation of surgery. It is hypothesized that surgeons will conflict with administration over issues which threaten the effective enactment of the status passage within the OT, and will seek to influence the organisation of surgery to enhance the status passage wherever and whenever possible. This study will build on data already presented in chapters 3 and 5, and new data derived from a range of interviews with clinicians and managers.

A third study focuses upon the particular organisation of surgery in a day case unit, in which such encounters between patients and surgeons are minimised, and all surgical efforts are concentrated within the boundaries of the OT. It is hypothesised that this will be a popular means of conducting surgery with surgeons, despite potential post-operative problems for patients and their general practitioners.

In this chapter a theoretical framework has been derived which, it is proposed, explains the data reported in the three preceding chapters in terms of a model of status change. The authority and privilege of surgery lies in its utilisation of techniques rich in the symbols of the rite of passage, whereby the cultural definition of the surgical patient is transformed from a negative, socially polluting and disruptive status to a positive, socially integrated and non-polluting one. Surgery owes its prestige to its effectiveness at a social level in imposing this re-definition on individuals who threaten the social structure by their individuality, and the strength of the legitimation of surgical authority thereby.

CHAPTER 8: THREE CASE STUDIES IN SURGERY

Introduction

In this chapter, the study returns to the ethnographic material gathered during field-work at General hospital, for analysis in the light of the cross-cultural ethnographies of rites associated with healing which were reported upon in the last chapter. It has been suggested that congruences between this material and the field-work data on surgery in this study support a status passage model of surgical healing. Refinement of the hypothesis concerning the social significance of surgical healing thus offers potential understanding of the authority and privilege attached through which the power of surgery in Western medicine is mediated. Surgery, as with other forms of healing, serves to legitimate knowledge and authority which reconciles the differing time-scales of the individual and of social institutions, by instigating a social re-categorisation of the patient from victim to survivor.

This chapter tests the hypothesis that aspects of surgery beyond the OT exhibit the importance of altering social status. Three case studies have been selected, which draw upon data not yet documented within this study, gathered during field-work. The first, concerning surgeons' interactions with patients and other staff on the wards takes as a starting point the definition by surgeons of their intervention as the limen between statuses, while the second considers the conflict with administrators who threaten the prosecution of this limen. Having thus tested the plausibility of the hypothesis with these probes (Mitchell, 1983) the final study, of day-case surgery, is intended as the crucial case study (ibid) by which the hypothesis may be finally put to the test.

Case study 1: Surgeons on the wards

Surgical ward rounds are rapid affairs. Some surgeons leave pre-operative admission to juniors and may not see their patients pre-operatively. Others conduct a round. These are the quickest rounds: on one occasion (Field Notes 12/2/5/1), the researcher arrived for a pre-operative round at the appointed hour, to discover that the consultant had started the round five minutes early and it had already been completed.

Post-operatively, some surgeons visit their patients the evening after a list, when they have been moved from recovery to their ward (or to the Intensive Therapy Unit). These are also brief, the patients usually being asleep, and the round principally consisting of a short report from the junior staff on the patient's recovery post-operatively.

Subsequent rounds are more leisurely, as the patient is usually capable of some interaction. During observation of these interactions, which may or may not include direct conversation with the patient, the researcher identified three themes:

1. The physiological condition of the patient.
2. The condition of the wound and its dressing.
3. The prognosis of the condition, patient recovery, and projected discharge date.

All these themes are surgeon-centred, the first the most so, the third the least. The ward round is a highly structured organisational form which enables surgeons to set the agenda of the interaction, and sometimes patients may not be included directly in the round except to receive a greeting and a brief resume of the clinical assessment before the round moves on.

Although from time to time the more articulate patient may gain temporary access to this agenda, possibly with the co-operation of the surgeon, the usual course of these interactions is governed by rules controlled by the surgeon. As a consequence, the interactions conducted by surgeons on the wards define and categorise the patients. In the light of the theoretical framework which has been developed in the thesis thus far, it is suggested that These categorisations serve specifically to emphasise the significance of the operation in the patient's sickness 'career'. In the subsequent analysis the discursive characteristics of each theme is examined to test this hypothesis.

Theme 1: The discourse on patient physiology

The interactions which take place on the ward round may be separated into those conducted between staff members and those between surgeon and patient. Usually the consultant surgeon spends some time in discussion with the junior surgical staff prior to any interacton with the patient, in order to familiarise her/himself with recent developments. There may also be a period of inter-staff discussion after the surgeon-patient contact. In these periods, much of the discussion concerns the patient's physiological condition, and will involve reports of tests, monitor outputs and proposals for further tests or medication. These tests are all problem-oriented: they define the patient in terms of her/his forthcoming operation, or her/his response to it:

> Patient B had been admitted for repair of inguinal hernia and fistula. His GP had written to say that because of a history of ischaemic heart disease H is not suited to general anaesthesia, however a previous consultant had assessed H as suitable for a general on the occasion of an operation four years previous. Tests were being carried out on H since admission in order to make a decision about

the form of anaesthesia to be adopted.

(Field Notes 25/9/6/2)

Occasionally, these discussions on physiology spill over into the surgeon-patient interaction during the round:

Patient H has been operated upon for a tumour of the gastro-intestinal tract. It was found to be disseminated, and during the operation had had a cardiac arrest.
Mr D: (to junior staff and researcher) 'Despite what we've done he seems to be getting better. How is his ...' (a long discussion on technical details of the patients metabolism ensues, including reports on tests and suggestions of further tests and action to stabilise the patient's condition.
The housedoctor introduces the problem of the wound, which is leaking as a consequence of having been only roughly mended because of the cardiac arrest on the operating table. The discussion now focuses upon this problem, and the relative advantage of different forms of skin sutures and staples debated. After about five minutes Mr D addresses the patient: 'How are you Mr H? Are you feeling less sick now?'
Patient H 'Yes, less sick.'

(Field Notes 6/8/6/1)

The interaction with the patient appears to be an afterthought, but in fact it continues the theme of the physiology of the patient, whose self-report of his condition is used to make a decision concerning future management of the case. The discourse does not develop into the alternative, more patient-centred theme such as 'recovery' (Theme 3).

In the case of Patient H, the nature of his condition (an advanced malignancy) may have precluded this deviation. In other patients, however, where there is a more positive

evaluation of potential outcome and recovery (Theme 3), especially on the part of the patient, a discourse on physiology initiated by the surgeon can lead to conflict of interpretation. In the following case, an inter-staff discussion of a patient's physiology concerning lack of bowel function as a result of a road traffic accident is continued in the first exchanges of surgeon-patient interaction:

> Mr D: 'Hallo, Miss F. (sits on edge of bed) Have you passed any wind yet?' (Because he is a gastro-intestinal (GI) surgeon, Mr D has an interest in post-operative flatulence as a clinical sign of GI function.)
> Patient F: 'No. Can I take this (oxygen) mask off?'
> Nurse: (sharply) 'No, not yet.'
> Mr D: 'You can take the mask off when you can breath, when the bruising on your lungs has gone down. We are going to give you a couple of suppositories which will get you unblocked, because your bowels are bruised too; that will reduce the swelling here, and that'll make your breathing easier. (To researcher) I said she was going to be a difficult patient.' (Field Notes 17/9/6/1-2)

Here the patient has subverted the discourse on physiology into one on recovery. Interestingly, Mr D's usual way of asking about post-operative flatulence is more folksy: 'Have you passed any wind out of your tail-end yet?' The question thus framed offers a more patient-centred interpretation, and it is usually concerned with Theme 3 (recovery/discharge). In the case of Patient F, who was admitted with a silent abdomen, the wording was not intended to indicate a significance other than within the surgeon-centred discourse on physiology. The subverting of the discourse away from the surgeon's discourse, and necessitating a long explanation in terms of Theme 3, is demonstrated by the comment to the researcher at the end.

The discourse on physiology is a surgeon-orientated technique for categorising the pre- or post-operative patient. Pre-operatively, the patient's physiology is a sign which determines the patient as a suitable case for surgical treatment. It will consist of the whole gamut of symptoms and clinical signs, plus possible investigations or biopsies conducted in the pre-operative period. All these have the purpose of categorising the patient as a surgical case. Once the categorisation has been made, then future activity is clear and unquestionable. It acquires a moral rectitude which the following extract from an pre-operative discussion between a female gynecology consultant surgeon and other staff demonstrates:

> Mrs V: 'Where is Dr S (registrar)?'
> Staff Nurse: 'He's looking at Patient X.'
> Mrs V:'He's taking his time, that fistula need not take him so long. Ten minutes, that's a long internal examination.' (1)
> Dr S: (arriving at the staff group) 'It's just a small hole in the rear wall.'
> Mrs V: 'Will you do it tomorrow afternoon?'
> Dr S: 'Yes, I'll try.'
> Mrs V: 'In that case put it down for me, and I will do it myself.' (2)
> Dr S: 'No, I can do .... '
> Mrs V: 'It's just that word "try" that I do not like, Dr S. I don't like it at all. (afterwards to researcher) I do not like Dr S, he is rude to the patients. The trouble with Dr S is that he cannot speak the Queen's English.' (3)
>
> (Field Notes 12/2/5/3)

Patient X's fistula has the effect of categorising her as a suitable case for surgery, and Dr S's apparent failure to immediately adopt the moral right to surgical intervention

leads to Mrs V imputing potential sexual misconduct (1); threatening to deny Dr S's access to the patient (2) and commenting on his ethnic background (in fact the same as Mrs V's, but from an inferior caste) (3).

The discourse on physiology is therefore important in confirming a categorisation of a patient and thus the moral right to operate. When the discourse on physiology does not confirm that right, interest in a patient is quickly lost, as in the case of Patient P, who was originally admitted for a cholecystectomy, but after tests is now to be transferred to a medical ward, to be treated non-surgically:

> There is a very brief discussion at the foot of the bed, during which the transfer is confirmed by the housedoctor.
> Mr D: (addresses patient) 'How are you today?'
> Patient P: 'Not too bad.'
> Mr D: 'We're just waiting for Dr X (medical consultant) to fix you up. It'll be Thursday (the next day), or maybe Friday. Then you'll be all sorted out. Goodbye.

Mr D has already started to move on to the next patient. The housedoctor comments that the medical procedure is in fact arranged for the Friday. Mr D replies in a disinterested tone, 'Friday, is it?' (Field Notes 17/9/6/3)

Post-operatively, the discourse on physiology is similarly concerned with guaranteeing the surgeon's moral right to have intervened to heal the patient. In this extract, a patient is being told what has been done during the operation, but the conversation develops into a series of re-definitions of the patient:

> Mrs V: 'Hallo Miss E, we sorted everything out for you, we've taken the (fallopian) tube, but the ovary is still there as usual.

Patient E: 'You left the ovary?'
Mrs V: 'Oh yes, we never take the ovary. (1) So everything's fine (2); but come and see us when you are trying for a baby, as you only have one tube now ...'
Patient E: 'I don't want a baby.'
Mrs V: (to nurse) 'Fix her up with contraceptives, the sheath.' (3)
Miss E: 'I thought I'd use an IUD.'
Mrs V: 'No, I don't want you on IUD or mini-pill, use the sheath and foam.' (4)

(Field Notes 15/2/5/8)

The surgeon first confirms that despite having removed a fallopian tube, by leaving the ovary intact she has not interfered with the patient's normal female hormonal balance, and thus her femininity (this was emphasised by Mrs V to the researcher as of great importance during a number of similar operations)[1], and goes on to say that she is 'fine' (1, 2). This point is emphasised when suggesting that she will fulfil the role of mother in due course. When the patient denies this desire, the surgeon turns away from her, and speaks about her in the third person to the nurse, commenting on a need for future sexual regulation (3). Finally, there is a return to the discourse on physiology with a comment which refers to the patient's new status as a person with an impaired reproductive system which could be affected by contraception (4).

The patient is therefore once again defined by the discourse on physiology post-operatively. However, this may not always be possible. Mrs O, a very old patient who has had a cardiac arrest on the operating table, does not offer the surgeon the usual rights to categorisation via the discourse on physiology:

Mrs O is a very small woman who is virtually obscured by a mass of high technology equipment placed around her bed, monitors, a complex three-way drip and ECG equipment, all

of which has been erected post-operatively by the medical (as opposed to surgical) staff. Mr D stops some way back from the end of the bed with his junior colleagues.
Mr D: 'That's a very impressive array of tackle.' (The word 'tackle' is used derisively, and the others smile.)
Mr D approaches the patient who mutters unintelligibly.
Mr D: 'You're doing fine'
Patient O: 'Nnnnnnnnn....'
Mr D holds her hand and tries to make eye contact beneath the oxygen mask. When there is no response, he turns to the equipment, and after looking it over starts to fiddle with one of the taps attached to the drip. After a few seconds he turns away.
Mr D: (to housedoctor) 'Here's a bit of IT [intensive therapy] for you.'
Housedoctor: 'I'm enjoying it.'

(Field Notes 17/9/6/4-5)

Here the equipment represents an unsatisfactory discourse on the patient's physiology, given that it was erected by non-surgical staff, and the patient is now no longer a surgical problem, her main sickness now being as a consequence of the cardiac arrest. Nor does the patient respond to Mr D's bedside manner, which would enable an alternative discourse to be invoked. Consequently Mrs O's continued presence on the surgical ward is an 'abomination', she is 'matter out of place' to use Douglas's (1984) term again, and Mr D's last comment suggests that the Intensive Therapy Unit (ITU) is the right place for her.

By the nature of Mr D's heroic specialty, a number of patients do end up in the ITU, where the physiology of the patient has become the concern of the ITU nursing staff and anaesthetists. Post-operative visits to the ITU down-play the involvement of the surgeon in care, and the interaction between patient and surgeon adopts a kind of empathic mood.[2]

Theme 2: The discourse on wound condition

This theme, while concerned with the physiological outcome of the surgical intervention is differentiated from the previous theme on a number of grounds:
1. It is consequential upon the surgery, not upon the condition of the patient.
2. It is a reminder that the surgery has been carried out, an indicator of the 'success' of the operation.
3. It is a theme upon which nursing staff and possibly the patient have an input.

Wound condition therefore plays an intermediary role between the discourse on physiology, which reifies the patient, bracketing her/his social and individual characteristics, and the theme of recovery and discharge, which more explicitly recognises the patient as possessing a social position. This theme refers back to the operation, but in so doing acknowledges that the patient is no longer in her/his pre-operative situation, and that healing has taken place. From this perspective, it is expected that this theme would form an important discursive element in the re-categorisation process.

Inspection of the wound is a regular part of the post-operative round. If the round is within the first 48 hours after surgery the dressing will be the one put on by the surgical team at the conclusion of the operation. The consultant may take the opportunity to remove this dressing on the round:

> Patient C has undergone surgery to remove an ovarian cyst. The surgeon Mrs V is seeing her the day following.
> Mrs V: 'Hallo Mrs C, we have sorted out your problem for you. Let us have a look at your tummy.' (Staff nurse and junior doctor pull curtains around, Mrs C is laid flat, and the dressing is removed.) 'Yes, that's OK. You will not have much of a scar there.' (1)

Patient C: 'Thank you. When can I go home?'
Mrs V: 'We'll see you on Monday.' (2)(to nurse) 'Can I have a (type of dressing) please.' (Consultant and housedoctor dress the wound with gauze and lengths of plaster.)

(Field Notes 14/2/5/1)

Sometimes the task of dressing the wound is left to the nursing staff, while the ward round moves on; in these case the original dressing is only partially removed, sufficient for the consultant to see the wound.

Inspecting the wound provides an opportunity, as in the previous case, to refer back to the operation to indicate its 'success' (1). It can also enable discussion of issues of recovery and discharge to be aired. However, in the case of Mrs C this is deemed an inappropriate development of the discourse, and, with the patient flat on her back, the issue is sidestepped (2). In the case of Miss A, a young patient who has undergone a minor operation, the wound inspection is used to promote the discourse on discharge:

Mrs V: (looking at case notes, speaking to house doctor, but across the patient) I think Miss A can go home today. Can we just have a quick look doctor.' (looks at wound, to patient) 'How are you feeling?'
Patient A: 'OK.'
Mrs V: 'Well you can go home today, have you someone coming?'
Patient A: 'Yes.'
Mrs V: 'Well that'S OK.'

(Field Notes 14/2/5/2)

This extract demonstrates how the discourse on the wound enables a distancing from the patient - the main discussion is between surgeon and other staff, not with the patient. It is

thus unlike the discourse on discharge, where the discussion is between surgeon and patient, as will be seen in section 4. The discourse on the wound does enable a degree of normalisation:

> Mr D: (having inspected a wound dressing on Patient M, an old man treated for a hernia four days previously) 'Your wound is healing well Mr M. I want you to get about a bit. You can have a bath, but try not to get the dressing wet.'
>
> (Field Notes 6/8/6/7)

The discourse on the wound thus provides a normalising referent indicating the status change from pre- to post-operative state. The patient can bath (i.e. normal behaviour), although in reality avoidance of wetting the dressing would prove a virtually impossible task given that the dressing was on a wound on the lower abdomen.

Patient N is an unhappy looking woman who has had surgery for carcinoma of the lower bowel, she is sitting on her bed, and appears to have anticipated the round as an important event: she has put make-up on.

> Mr D: (to researcher) 'This one is a bit of a hypochondriac. She has no colon left, and her urine comes into a bag too.' (he sits down on the bed, but no move is made to examine the patient.) 'How is the ileostomy?'
> Patient N: 'It's much better, at least this one works.'
> Mr D: 'Good.' (turns away and initiates conversation with the housedoctor as patient tries to ask a question) 'We'll see you on Tuesday.'
>
> (Field Notes 6/8/6/3-4)

The importance of the wound in referring back to the operation is seen in the following case in a dramatic way. Patient S had been recovering from an abdominal operation when unexpectedly her wound burst. However, this disaster is not allowed to

undermine the patient's status as healed, and throughout the discourse mention is continuously made, often in technicalities beyond the patient, to the satisfactory outcome of the surgery.

> Patient S is sitting in an armchair - she is looking quite distraught.
> Mr O: 'Hallo, Mrs D; well we were going to send you home yesterday weren't we, thank the god almighty we didn't.'
> Patient S: 'No.'
> Mr O: Well we just don't know why this happened, there's no infection, no haematoma, nothing at all to cause this. You were up and walking ...'
> Nurse: 'Yes she was walking about, and went to the lavatory and was straining, and then ...'
> Mr O: 'Yes I hear there was small intestine hanging out. Well, you've had a nasty time, and we'll keep you in for ten days.'
> Patient S: (aghast) 'Ten ... days ...'
> Mr O: 'Yes, but there's absolutely nothing the matter inside, we don't know why this happened, so we'll keep you in for ten days.'
>
> (Field Notes 15/2/5/2-3)

The discourse on the wound is thus a way of obliquely referring to the success of the operation, which as may have been noticed, is never discussed explicitly in surgeon/patient interaction,[3] and couched in the technicalities of the discourse on physiology between staff. However, the wound is a symbol which stands for the operation, it is the physical sign that healing has been achieved by a legitimate authority. The third theme also defines the healing process as complete, but by reference not back to the operation, but forward to the next phase of the patient's biography.

Theme 3: The discourse on recovery and discharge

Discharge from hospital is a topic which most patients seek to place at the top of the agenda of the ward round. A number of techniques which are used by surgeons to subvert this attempt have already been documented. However, the theme is one which will be instigated by surgeons at a time suited to them. The authority of the surgeon extends throughout the post-operative period, in her/his ascribed moral right to determine the date of discharge. The surgeon declares how well the patient is recovering, and may or may not suggest a discharge date. When a date is fixed the pleasure on the part of the patient which derives from this decision, in conjunction with the authoritarian nature of the discourse on recovery and discharge gives the air of a benevolent despotism to these interactions.

In the immediate period following an operation, the surgeon may choose to make statements to the patient about how s/he is recovering, without mentioning any possible discharge:

> Patient G, an old man, has had an appendicectomy, and removal of a tumour from his abdomen. Mr D is cheerful.
> Mr D: 'We will have you up in three weeks, and by then we will know what it is that we took out.' The patient appears to accept this version, although it provides no information about the tumour.
>
> (Field Notes 6/8/6/2)

> Patient H, has had a stone removed from the bile duct, is still very jaundiced, but is very happy that her operation is over. Mr D is concerned to discover the reason for the stone, and is asking a range of questions about the patient's family history. He allows the conversation to be subverted
> Patient H: (looking at the gall stone which he has in a jar by his bedside) 'Where was it?'

Dr D: 'It was in the little tube that links the gall bladder to your intestine.'
Patient H: 'Will it come back.'
Dr D: 'It's possible.'
Patient H: 'Was it to do with my diet?'
Dr D (laughing) 'No. Just wait till the first time you see ice cream or cream.'

(Field Notes 6/8/6/4-5)

In both these cases the patient is supplied with information which confirms that s/he is recovering, and while the operation supplies the hook for the conversation, the emphasis is upon the future.

When the patient expects to be considered for discharge, this emphasis becomes central, but now a further element is added to the discourse. Up to now, the surgeon's locus of activity and concern has been limited to the patient's body. Now, this area is widened, to include the patient's future biography, and his position within society - explicitly her/his home and familial arangements.

Patient T has no post-operative problems, but her circumstances are slightly unclear.
Mrs V: 'Hallo, Mrs T, well I think you can go home.'
Patient T: 'Go home today?'
Mrs V: 'Yes I think so, where do you live?'
Patient T: 'In (district) ....'
Mrs V: '.... near, yes ... have you someone coming?'
Patient T: 'Yes my husband is coming.'
Mrs V: 'Yes ring him to tell him to come this afternoon, and we'll see you in a week for the stitches.'

(Field Notes 15/2/5/1)

Patient W is an old man who has had a major resection for gastric carcinoma. Mr D plans to send him home if he can

be looked after.
Researcher: 'Are you sending him home to die?'
Mr D: 'Oh no, I THINK I've cured him. Gastric cancer is not that difficult to treat, although in the long term prospects are not good.' (moving over to patient) 'Who's going to look after you when you get out?'
Patient W: (smiling) 'You tell me when I can go, and I'll arrange to be looked after.
Mr D: (smiling) 'That's right .... but seriously though ...?'
Patient W: 'Well my sister. She's older than me of course, but ....'
Mr D: 'Well someone to cook for you?'
Patient W: 'Oh yes, that'll be alright.'
Mr D: 'Make a clinic appointment for next Wednesday and you can go home now.'
Patient W: 'When?'
Mr D: 'As soon as you can arrange it.'
Patient W: (pretends to get out of bed) 'Well I'll give a ring now. (very pleased) Thank you.'
Mr D: (joking) 'At least we're not sending you for convalescence, terrible place, worse than here. If you go for convalescence you don't need convalescence.'

(Field Notes 15/9/6/1-5)

In the latter example Mr D uses a search procedure in order to find excuses for discharging the patient, and the joking relationship enables them to cast off their previous interaction which has been orientated toward the operation and the patient's illness, re-constituting the patient in the status of healed.

While surgeons utilise search procedures to assemble a case for discharge, patients' attempts to supply such information when the surgeon has decided against immediate discharge founder. Patient Z is an old lady who has had a major gynecological

procedure, and who's recovery has been slower than expected:

> Mrs V: 'Hallo, Mrs Z, I think you can go home on Monday.'
> Patient Z: 'On Monday, not today?'
> Mrs V: 'No, I think we'll keep you in till Monday. (to housedoctor) Doctor, can you listen to her tummy. Where do you live Mrs Z?'
> Patient Z: 'In (district).'
> Mrs V: 'On your own?'
> Patient Z: 'Yes, but I've arranged for my sisters to come over to me ...'
> Mrs V: 'Yes.' (to housedoctor) 'Does that sound OK?'
> Housedoctor: 'Yes, it's OK.'
> Patient Z: ' .... they're nurses. They're not actually working any more, but they're qualified nurses ....'
> Mrs V: 'Yes, you can go on Monday.
>
> (Field Notes 15/2/5/2)

This extract indicates that despite the more 'patient-centred' orientation of this theme, surgeons still set the agenda on recovery/discharge, as with the other themes. There is an apparent conflict for the surgeon here. On one hand, s/he must take into account the weakened state of the post-operative patient. On the other, discharge is evidence of the new status which the post-operative patient holds, and therefore is an attractive option for the surgeon. The researcher witnessed one way in which the discourse on recovery was utilised to resolve this conflict. Mr D's ward round had arrived at Patient Y, who had developed a slight pyrexia:

> Mr D: (to patient, looking at chart) 'Hallo Mr Y. Well we want to send you home, but I don't like that raised temperature.' (1)
> Patient Y: 'No.'
> Mr D: 'I don't know what can be causing it. We've cultured the wound and there's no infection there. I just don't

know what's causing it ..... Are things ready for you to go home?
Patient Y: 'Yes, my wife can come and collect me today.'
Mr D: 'Can you go to bed, and she can look after you?'
Patient Y: 'Yes.'
Mr D: I don't like that raised temperature. (2) Phone your wife and you can go home now.
Patient Y: 'Thank you very much.'

(Field Notes 15/9/6/6)

Mr D uses the phrase 'I don't like that raised temperature' twice in this short interchange, but whereas at (1) the meaning imparted is that the raised temperature is possibly a complication which should be resolved before discharge, at (2) it has changed its meaning, and now the pyrexia is an annoying detail which is preventing the return to home and the categorisation of healed. Mr D's dislike of it means he can ignore it and thus allow the patient home!

Summary

The ethnography of the ward interactions analysed above in terms of the three themes of physiology, wound condition and recovery/discharge demonstrates that surgeons routinely constitute two important foci in the categorisation of their patients; firstly, the operation - which defines the limen between the deviant and the healed statuses, and secondly, the latter status of healed itself. Patients are classified post-operatively either by emphasising the focus of the operation via the discourse on physiology and the wound, or the focus of the healed status via the discourse on recovery/discharge. Where patients threaten to become aberrant, as in Patient S, whose wound had burst, the discourse is altered to focus not upon discharge but upon the 'successful' operation; or as in the patient who was to be treated medically (Patient O), by effectively ignoring her, as of no further interest.

Finally, as with the patient who had arrested on the table, and was unresponsive either to the original surgical intervention or to the 'bedside manner' (a variant on the discourse on recovery), by marginalisation and a re-categorisation as a medical or an IT problem.

Thus, surgeons use the three discursive themes to define the moral status of the patient, and consequently their own authority and privilege as healer. Success in surgery has become implicit: firstly by the reality of the operation having occurred, which in the ward environment is significated through discourses on patient physiology and wound condition, and secondly through the re-categorisation as healed made possible through the discourse on recovery/discharge.

Further discussion of this case study will be conducted, with that of the other cases, in the next chapter.

Case study 2: The management of surgery

"Consultative mechanisms in the management process foster bad, non-professional thinking." - Anaesthetist Dr J (3/3/7/6)

The surgeon, and the anaesthetist - as was seen in Chapter 5, like any doctor in Western medical culture, claims a right to autonomy of action - the well-being of her/his patient being claimed as the primary and over-riding concern in her/his practice. On the other hand, surgeons, like all doctors working within the National Health Service hospital service, must perforce accept the constraints upon action imposed by an institution and its management, and the resources which it controls and allocates. The second study in this chapter focuses upon this paradox of Western health care, (which it is suggested be called the paradox of autonomy/constraint - henceforth PAC), a paradox which has been the subject of various policy changes since the inception of the NHS.[4]

This case study intends to consider a further aspect of surgery, as gathered by ethnography and interviews obtained at General Hospital during the period of field study: the day-to-day management of the surgical enterprise. One feature of surgery is the daily interruptions, delays and over-running of lists, which has been documented elsewhere in this work. From the point of view of the hypothesis that the surgical enterprise has as its most important concern the social re-categorisation of patients from one status to another, then this kind of disruption, it might be argued, would be unexpected. This aspect of daily life in the OT therefore offers an opportunity to test the main hypothesis of this study; this section focuses upon the reasons for disruption of routine, investigating an aspect of General Hospital which has at yet not been considered, its management procedures: specifically those which affect surgery.

As a corollary of this main hypothesis, it is hypothesized that a study of management will identify processes which reflect the concerns and values embodied in the surgical enterprise. One objective of management will be the resolution of any day-to-day anomalies or problems which, consequential upon the PAC, arise within the service. Further, it is hypothesized that the disruption to the smooth running which does occur is an unintended consequence of the relationship between management and clinicians. This section therefore takes the form of an investigation of management attitudes to the daily running of surgery, and an analysis of the kinds of disruption which occur, the agencies which initiate the disruption, and the conflicts which arise from it. Before embarking on this project, a brief contextualisation of the ethnographic material within the institutional structures of management organisation at General Hospital is necessary.

From a managerial perspective, General Hospital forms the principal component of the acute Unit of its District; the

other components comprising a small general hospital and a group of hospitals specialising in neurology. Currently, a further re-structuring which will integrate this acute unit with geriatric services is under consideration. A major building programme at General Hospital will, within the next few years, substitute a sprawl of single-storey buildings dating from the mid-20th century and housing Nightingale-style wards, with a multi-storey block based on smaller rooms.

Since the Griffiths re-organisation of the NHS, administration at General Hospital is the responsibility of the Unit General Manager. The three areas relevant to the management of surgery on a day-to-day basis are managed by:
1. General Services Manager: responsible (inter alia) for distribution of supplies
2. Patient Services Manager: responsible for out-patients, admissions, bed information and records
3. Clinical Services Manager: responsible for staffing and running of clinical areas.

The Clinical Services Manager in turn delegates to clinical nursing managers A to E, each of which is responsible for a clinical area organised around a number of wards, to the Operating Department Manager (ODM), responsible for surgical operating suites, and to the Night Services Manager.

As described in Chapter 2, General Hospital possesses five twin surgical operating suites, and a further theatre used for endoscopies. The organisation of surgical services is consequently a considerable operation, entailing control of a substantial number of nursing and auxiliary staff: 120 people (88.34 full-time equivalents) during day shifts - outside day shifts, two theatres are staffed and available for surgery; the provision of supplies ranging from sterile dressings to equipment hardware; and the regulation of the supply of patients to the theatres 24 hours a day. The co-ordination of these three

elements derives ultimately upon the ODM. Within each theatre suite responsibility for staff rotas and control of patient lists is delegated to the Theatre Sister.

The position of clinical staff

This description of the management of surgical operating suites at General Hospital derives in part from an early interview with the anaesthetist informant Dr J, who with the researcher studied the official diagrams of the management structure which had been circulated to 'enable staff to understand the organisation' (Field Notes: 3/3/7/1). During this interview, the researcher commented that 'there does not seem to be any mention of clinical staff in this plan'.

> Dr J: No .... that's true (looking at the diagrams, and checking to see if the researcher was correct). No, they are not mentioned.
> Researcher: Does that mean that they are not under the management of the hospital?
> Dr J: Well .... no, they aren't. They are employed by the NHS to work in the hospital. (Field Notes 3/3/7/3)

These questions appeared to have the effect of providing Dr J with some insight which he had not previously fully recognised, and although he was cautious enough to check with a colleague that the situation was indeed that there was no obvious place within the management structure for the clinical staff, the suggestion by the researcher that the doctors 'sort of float around outside this hierarchy' was accepted as appropriate and also as an apparently attractive concept. The conversation continued:

> Researcher: Doesn't that make it difficult for the clinicians to have an influence over the running of the

hospital? You have no direct input to the Unit general manager.
Dr J: Yes I suppose that's so ....
Researcher: There is the Hospital Consultants Advisory Committee to the District general manager ....?
Dr J: We would give advice on an informal basis to the operating department manager .... but that will be accepted or rejected .... The clinical area managers will come into contact with the consultants. (Field Notes 3/3/7/2-3)

Dr J considered this day-to-day contact with the nurse managers, and with theatre sisters, more significant than the rarefied atmosphere of the district and unit level advisory committees. The function of these are identified (from a management perspective) in an un-dated consultative document on management of General Hospital's district, supplied to the researcher:

VII. THE PROVISION OF PROFESSIONAL ADVICE

7.1 The introduction of the general management function into the Health Service in no way diminishes the need for professional advice, particularly medical and nursing advice .... where doctors are responsible for the decisions which commit most of the Service's resources, it would be inconceivable that it could be managed effectively without substantial input .... Paradoxically, as the service becomes increasingly complex it requires .... both general management and better advice from professionals. ....
7.4 At the Authority level, the two medical members - consultant and general practitioner - will continue to give general professional advice in a personal rather than representative capacity.
7.5 At District level the consultant and general practitioner representatives will advise the District

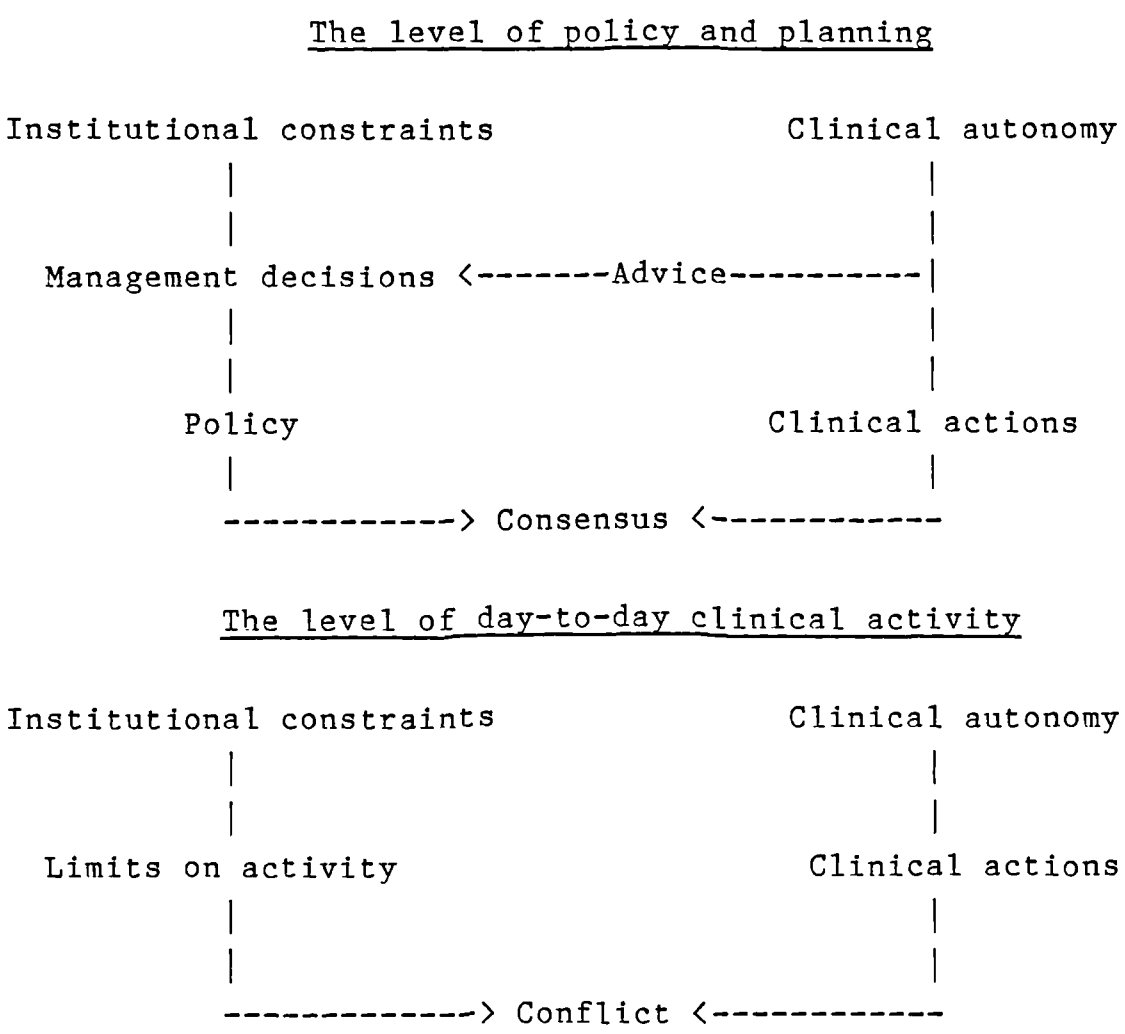
> General Manager and the Management Advisory Group ....
> 7.6 At Unit level, there will be at least one Medical Adviser nominated by the Unit Medical Advisory Committee or its equivalent who will advise the Unit General Manager and the Unit Management Advisory Group (Anon: un-dated).

The description of these formal structures suggests that the problem of reconciling institutional constraint with clinical autonomy - the PAC - is resolved in the longer term, in policy and organisation matters, via the concept of 'advice'. The management seeks and is provided with advice from the clinical consultants (and nursing advisor) and acts accordingly, within some management programme. The autonomy of consultants to act according to their clinical judgements is constrained by institution factors (resources, time etc), but these constraints are to be seen as rationalizations made by management as a consequence of the 'advice' provided by clinicians.

At this level then, the PAC should indeed be paradoxical, as opposed to a source of conflict. However, it is hypothesized that this will not necessarily be the case on a day-to-day level. Management decisions will be reified as structural constraints: resources and rules of the institution. Clinicians will, through the practical activities of medicine exhibit their claim to autonomy of decision-making. The paradox of autonomy and constraint is no longer paradoxical, but dialectic, with a synthesis which is potential conflict. This is represented diagrammatically in Fig. 8.1.

If this model is correct, then a failure of the PAC at the level of daily routines, and its substitution by an outcome of conflict, is predicted. It explains on one hand, the acceptance by consultants of the management's right to manage, and on the other, the reality of conflict within the OT.

Fig 8.1: Interaction of constraint and autonomy



As a model, it also provides a framework in which to test aspects of the main hypothesis of this study relating to the nature of surgery as a status passage. Two predictions may be made:

1. That management structures as far as possible mirror the concern with the smooth passage of patients through the OT.
2. That the limitations to this emphasis upon the status passage model of surgical healing which management impose, particularly in terms of access, staffing and other resources - represented through those rules and institutional arrangements laid down by management governing the running of the OT - will

be the precise areas where conflict will arise between surgeons and management-imposed representations of constraint.

Management attitudes to disruption of routine

From a management perspective, it would be expected that control and maintenance of the routines of surgery would be identified as principal objectives, and that a failure of routines in day-to-day running of theatres would be a cause for concern. In order to broaden the base for analysis, two operating department managers were interviewed on the topic of the daily management of the OT: General Hospital ODM nurse F, and consultant anaesthetist and part-time ODM for a nearby general hospital, Dr M.

> The work of the ODM entails a big personnel management task. The day in theatre is 8 am to 5 pm; two or three nurses will work a half-day, the others come on the late shift. I make sure that the work gets organised to make the best use of staff. I'm responsible for re-deploying staff from one theatre to another; in theory we have two theatres overnight, and are on take for at least five types of surgery, possibly up to seven types. From time to time I look at scheduling, to make efficient use of theatres, and I monitor the amount of emergency operating in sessions. (Interview with Nurse F 6/3/7/1-2)

Dr M offers a slightly different emphasis, patient-centred as opposed to resource-centred:

> Emergencies are more of an administrative than a medical emergency. If we are running an efficient unit, we want to run nurses, anaesthetists and equipment all the time. So we fill all the theatres nine to five with elective surgery. If an emergency arises, we need to break into the elective list, and then find extra time for the elective

> surgery. Surgeons prefer to let the emergencies build up, and then do a list overnight. But that is awful for the patients, because the surgery will be done by on-call surgeons. The alternative is to have three theatres open in the evening - but most of the time two will lie unused. (Interview with Dr M 21/5/7/4-5)

Dr M recognised the significance of his position as a part-time clinician and part-time manager, and the effect of his clinical background on implementation and control of surgical policy:

> Doctors are totally outside the management structure. Griffiths (management re-organisation) thought the only way to bring them in was to involve them as managers. The consultant is still the boss, they may not be able to initiate anything but they can wreck things. For instance, moving lists is an administrative nightmare. Consultants' lists are tied up with outpatient clinics. They don't want to do a Monday morning list when no tests can be done in advance, or Friday afternoon when they do their private casework. A consultant may have taken ten years to get the right arrangements, and will not want to change. I've been here fifteen years, so if it comes to leaning on a surgeon I have the power, and I understand their concerns. If a nurse manager told a surgeon something he would say no way. It works out quite well in practice. (Dr M 21/5/7/2)

However, this is not ODM nurse F's perception of the advantage of part-time managers recruited from clinical staff, and she had considerable doubts about their input:

> Clinicians do not have the time to be managers, they have to give up some of their clinical commitments. They claim they want to control the staff, but without having to do any managerial work. Currently clinicians are being involved in plastic and neurosurgery management. It's a waste of my time and theirs, but its a novelty for them at the moment. They come up with ludicrous ideas, for instance that all nursing staff should work early shifts Monday to Friday, and be on call at weekends. But the staff have to have time off. And they don't understand that there have to be staff in theatre at other times to do the routine preparatory work. I can't think of one good idea that has come out of it. (Nurse F: 6/3/7/6-7)

These two managers also had different perceptions of the reasons surgical operating routines are disrupted. Dr M apparently continued to perceive himself as a clinician with an interest in the strategic level of management. It was threats to disruption of these longer-term plans rather than the day-to-day routine which he identified, pointing to general uncertainty, to out-dated traditions, and to higher management as the principal obstacles to efficiency.

> One of the things that is worrying clinicians about management, with all the new management exercises, is that one is playing the numbers game - there is no measure of quality. For instance, regional management noted there was no orthopaedic day case surgery at [Hospital W]. The reason is that it's in the middle of nowhere - but management do not understand that. One of my reasons for getting involved in management was to bring in some clinical judgements. (Dr M 21/5/7/3)

> There is an attempt to reduce waiting lists currently. The trouble is if you reduce them to nothing, then the

> surgical service is dependent on the ebb and flow of what comes through the door. So you instigate an appointment system booking three months ahead. All the lists are full, but if a couple of emergencies appear, you have to cancel some, and the cancellations go to the bottom of the list again. In orthopaedics, beds are blocked by emergencies, and waiting lists then go very slowly for elective cases. (Dr M 21/5/7/4-6)

> Nurses are a very conservative group, and it's difficult to get them to change their practices, although they may be very enthusiastic once it is done. I found that recovery nurses start at eight a.m., and don't have any work until two hours later. Problems are soluble - if a list is late then somewhere along the line there is a bottleneck. One may find that it is impossible to start a list on time because there is no escort nurse from the ward. That is a consequence of a blanket freeze on recruitment. (Dr M 21/5/7/5)

The only comment upon the surgeon as potential disruptor of daily routine came as a comment reflecting Dr M's other persona, as consultant anaesthetist:

> Anaesthetists like to see patients the evening before a list, and object strongly to changes in a list subsequently. In terms of managing anaesthetic time, most people know how long it will take - up to an hour for a major case. The surgeons can go and dictate their letters - the anaesthetist can say 'we'll call you when we're ready.' (Dr M 21/5/7/6)

Dr M thus identified the smooth passage of an optimal number of patients through the OT as the principal objective of his participation in management. Nor did he perceive disruption of surgical routine as a primary concern. Nurse manager F, on the

other hand, while recognising the strategic planning aspect, including upgrading of theatres and developing a central instrument preparation unit to enhance patient flow through surgery (Interview with Nurse F 6/3/7/1), saw the attempts by clinicians to push as many patients as possible through the OT, not as desirable, but as potentially disruptive of routine and a serious management problem.

> Surgeons are primadonnas, they want theatres to be open longer however long they are open. If I had an extra ten staff things would be very different, but we are very efficient, we do not waste resources. (Nurse F 6/3/7/5)

> I can try to control the amount of work. I keep telling surgeons to control their lists. Theatre sisters have a high profile in advising surgeons about the amount of work, but there are sometimes problems. Recently there was a night with 12 emergency cases. Consultants in thoracic, gyne, neuro and general surgery came in, and they all wanted to operate as quickly as possible. They are only interested in their own patient and what they want to do - they are not interested in their colleagues. They wanted the staff and extra theatres to be available, and it was up to the night sister to decide who went into theatre, in which order. Fortunately she was very experienced, and got it about right, and none of the patients suffered medically. When the surgeons cool off they will realize they were selfish, but since it happened I have had the surgeons on the phone asking me to sort it out so it doesn't happen again. (Nurse F 6/3/7/3)

> It can be very unpleasant in theatre. I would say that surgery is unique, and being in theatre is unique. The surgeons are not like that on the wards. Theatre sisters have to deal with very unpleasant people, and protect their staff from them. It has to be someone who is not

> frightened to take the surgeons on. Surgeons will try to take advantage day after day, and will use emotional blackmail to try to keep staff on late. One of the surgeons in plastic [theatre] says that if you want to be a theatre nurse you must not have a life of your own. That is old-fashioned! (Nurse F 6/3/7/4)

The possibility of a serious breakdown of surgical services, and the ire of surgeons were this to happen, provokes a criticism of a fellow manager:

> I feel that the support services leave a lot to be desired. For example at the moment we have enough sterile supplies for one day. I am having to chase for supplies to make sure that there are enough to last through the day. This is the responsibility of the General Services Manager, who is an ex-lab technician, who has shown some managerial skills. (ODM Nurse F 6/3/7/6)

These comments by Nurse F recognise the reality of life at the heart of the surgical milieu, the operating theatre and its immediate environs - the constant interruptions to routine - an aspect not acknowledged in the official documentation, or in the comments of Dr M. This disruption has been reported in previous chapters of this work, primarily in the description of staff, instrument and patient circuits in Chapter 3, and in Chapter 5. It is to this disruption, and the perceptions of it by OT staff, that this analysis now turns.

The disruption of surgical routine

As has been documented earlier in this ethnography, the routine of the surgical day at General Hospital, (which may or may not be divided into morning and afternoon lists, depending upon the surgical specialty), by which patients are processed through the surgical enterprise, is regularly disrupted by a remarkable

component of apparent inefficiency and unpredictability. Patients arrive late, or not at all, patients are precipitately removed from lists or substituted by ones with quite different procedures, procedures are not those planned and written into the list, no account of anaesthetic time is made, too many patients are scheduled and lists are unmanageable or last into the evening, instruments are unavailable and not ready at the same time as the patient. (Field Note references to these episodes will be found in Chs. 3 and 5.) A typology of these disruptions to routine is developed in Fig. 8.2.

The researcher's first experiences of surgery at General, from a first morning in which a list inexplicably diminished to two cases separated by a long delay, left him with an assumption that these unpredictable alterations and delays were anomalous, an accidental consequence of the uncertainty of the surgical process. This impression was bolstered by the paucity of any commentary by OT staff during delays or interruptions, during which staff would retire to offices or the rest room and make desultory conversation. The recognition by the researcher that this pattern of delays was in fact the norm, and the apparent lack of exasperation by staff was a stoicism in the face of a regular and seemingly inevitable occurrence, came only after a period of familiarisation and questioning of informants among staff members during the course of field-work. The explanations offered by OT staff ascribed blame to a variety of actors or agencies. One informant - the anaesthetist Dr J - was an enthusiastic commentator upon the inefficiencies witnessed in theatre; his discursive use of them to define the moral and intellectual superiority of anaesthetists over surgeons has been documented in Chapter 5. For most staff other than surgeons, the culprits in disrupting routine is the surgeon, and their comments focus upon the range of 'surgeon-initiated' disruption represented in Fig. 8.2:

Fig 8.2: Initiators of disruptive episodes

A. Delay in patient arrival in theatre

Management
1. Porter unavailable
2. Ward nurse escort unavailable
3. Patient processing not complete e.g. case notes, consent, late arrival in hospital

Surgeon
1. Patient is not called until previous operation completed
2. Patient processing not complete e.g. case notes, consent, late arrival in hospital

Anaesthetist/Surgeon
1. Patient has not been pre-medicated

B. Delay in induction

Patient history suggests contra-indications for anaesthesia not anticipated prior to arrival in OT, due to:

Surgeon
1. Late addition to list
2. Change in procedure

Anaesthetist/Surgeon
1. Anaesthetist has not seen patient in advance
2. Patient not pre-medicated

Uncertainty
1. Clinical signs elicited on arrival
2. Induction complexity greater than anticipated

C. Delay in commencing operation

Surgeons
1. Surgical staff not scrubbed
2. Instrumentation not ready due to change in procedure

Management
1. Nursing shortage

D. Increase in operation time

Uncertainty
1. Exploratory procedure reveals need for further procedure
2. Complication or unforeseen complexity arises
3. Crisis management

E. Operating session runs over limits

Surgeon
1. Additional elective patients on list
2. Induction time not accounted in planning list
3. Overall operating time under-estimated

Orthopaedic surgeons are the worst, they arrange things at the last minute, and then they're not organised properly. They don't communicate. It's probably because most of them are foreign - they don't understand each other. (Nurse J 17/3/7/3)

There was absolute chaos here [plastic theatre] yesterday. The list was arranged so that patients were due in theatre hours before they came to hospital. Then in the afternoon, two major cases were put on the list - which meant there was not enough time without keeping staff on after six, and it had to be re-arranged, so one case is being done today instead. (Dr J 12/2/7/2-3)

The surgeon does not consider the anaesthesia to be anything other than wasted time. They don't take it into account. ... Surgeons regard the theatre as their own, they say what will go on. (Dr C 23/2/7/2-3)

In making up a list, surgeons will think of the operating time, but will forget the anaesthetic and induction time. (Dr J 12/2/7/5)

Two or three per cent of patients will have a problem [which makes anaesthesia risky] which cannot be sorted out. The anaesthetist needs to see the patient, but some firms [of surgeons] seem incapable of concocting a list until the morning of the schedule, if it's difficult to get the details of the list, one cannot identify the problems. So you either hope for the best, or postpone the surgery. But life is short, and we are reliant on the good-will of the whole team. (Dr J 12/2/7/8-11)

Thoracic surgeons do not readily give up their rights and responsibility for a patient who comes into Intensive

> Therapy after an operation, because they see it as the slippery slope towards death. (ITU Nurse C 5/2/7/1)

> Mr [ ] will never call for the next patient to be brought from the ward until the current patient is virtually sewn up. That can mean a long delay, as the ward may not be geared to immediately jump to it. (Nurse J 19/2/7/3)

> Anaesthetist Dr W: I don't usually know who is on the list until I arrive, so I don't usually give pre-meds.
> Nurse J: They never give orthopaedic patients pre-meds.
> Dr W: They never know till the last minute if they are on the list. (Field Notes 17/3/7/8)

> Surgeons will only change (their administrative habits) if they are forced. (Dr F 24/6/7/4)

Surgeons on the other hand do not accept that it is they who are preventing the smooth flow of OT routine. They blame staff outside the OT, patients or their over-worked juniors. Where they themselves may be theoretically culpable, the disruption is explained away as something which comes with the job:

> This [a particularly long delay of over an hour] is the sort of thing that happens. The consultant tells the staff nurse [to arrange a patient to sign a consent form, in this case], who tells the houseman, who forgets, or is too busy. (Surgeon Mr Y 17/3/7/4)

> Yes, there is quite a lot of hanging around, that's the price of being part of a large organisation. (Surgeon Mr T: 19/2/7/3)

> Orthopaedic surgery at General Hospital is on take seven days a week, so there are always emergencies. A list is

made up at very short notice. There are patients in the wards, and we decide to add them to a list. People say that they don't have to go on this list, but they have to go on a list. That's what people forget. (Mr Y 17/3/7/5)

I can't believe it, the man came [to collect a tissue biopsy] and the secretary sent him away. He came all the way from [ ] himself and she sent him away. (Surgeon Mrs V 13/2/5/3)

Here we are [in the rest-room], all ready to do our work, and we wait on the ministrations of the porter to bring us our work. (Surgeon Mr M 12/2/7/4)

That's the trouble with this country, no-one will do anything properly. (Surgeon Mrs V 14/2/5/3)

The anaesthetist Dr J, while critical of surgeon incompetence, was also willing to implicate other staff as blameworthy:

It's a problem having to think for everybody. You suppose that everyone knows what they are doing, but much of the time they don't seem to. (Dr J 12/2/7/12)

That call was from the ward - there's no-one to come up to theatre with the patient. That usually means that the staff nurse has not planned ahead. (Dr J 12/2/7/12)

It's a fundamental professional tenet that the nurse will accompany a patient to the theatre - she will know about the patient, for instance his temperature that morning. But in fact the nurse may go along just as an adornment, she may have come from another ward. That is the mechanical operation of a professional tenet, and it has never been in the nursing process that a nurse should think about the need to go with the patient. (Dr J 3/3/7/5-6)

> Patients are called by letter, and will or will not agree to come in. Sometimes it's difficult to arrange substitutes, but it means you cannot plan with any confidence that the list will be as proposed. Some surgeons anticipate this, and send for more patients than they would expect to get. Then they have too many, and this is irritating if it happens too often. It's a problem for nursing staff, who are very rigid. ... Patients may decide not to admit themselves. Especially if the operation is not important - varicose veins or wisdom teeth - or if it's holiday time. And they don't bother to ring up to cancel. (Dr J 12/2/7/4-6)

> The waiting list is a head of steam which enables us to fill lists. The politicians talk about reducing the waiting list, but there isn't one. There are a number of small complaints which are unimportant but unsightly; however the NHS is not there to aid vanity. That's what the private sector is there for. (Dr J 23/2/6/6)

Turning once again to the typology of Fig. 8.2, it can be seen that while one category of disruption - that marked as due to uncertainty - is not commented upon as other than legitimate, nursing staff, managers and some anaesthetists identify surgeons as the cause of unnecessary disruption. Surgeons, on the other hand, do not accept that their actions are anything other than legitimate. They perceive last-minute arrangements or changes to lists, changes in procedure, over-loading lists and ignoring preparation time as part of their role as healer - moving bodies through the surgical space, achieving the status change for all those for whom it is considered appropriate. For surgeons (and Dr J, the anaesthetist), those who are to blame are ward nurses and porters, who are not there to ferry patients into the OT, anaesthetists for taking too long in induction and preparation, or patients who do not appear for their surgery.

One further point of interest is the absence of any blame ascription to management by surgeons for specific delays or inefficiencies. While constraints set by management such as failure to provide equipment for a third neuro-surgery theatre (Field Notes 24/2/7/2) were topics for complaint, and cutbacks and hold-ups in development of the hospital were regular topics for discussion or wry comment, it is as if the official consensus between clinicians and management represented in the upper half of Fig. 8.1 is accepted as an ideal. Failures to live up to the ideal are not to be laid at the door of management.

Discussion

While surgeons complain of interruptions and delays which prevent them from fulfilling their role as the healer, moving as many bodies as possible through the OT, those who complain of surgeons disrupting the routine of the OT, do so not so much in relation to patients, but to their own work. Nurse F's commentary on surgeons concerns itself principally with the conditions of service of nursing staff in theatre.

The conflict which arises within the day-to-day activities of the OT is a consequence of this differing orientation. At the level of policy, management and clinicians share a common purpose of maximising patient throughput - despite a possible difference in emphasis - and enable 'advice' to be offered and accepted. Consequently the PAC; the dialogue between clinical autonomy and institutional constraint is resolved through acceptance as paradoxical rather than as a source of conflict. At the everyday level, however, the concerns of management have been transmuted: they are no longer wholly compatible with the concerns of clinicians, for they will tend to act against the desire of the surgeon to process patients through the healing space. Surgeons

1. attempt to optimalise the use of the surgical facilities, and fail to accept institutional constraints on time.

2. list patients assessed as in need of treatment at very short notice, or change procedures at short notice, with consequent problems prior to a patient's arrival in the theatre.
3. may not unreservedly release their patients into the responsibility of recovery personnel, thereby delaying the following operation.

Institutional constraints, in the form of routines of staffing and OT procedure, not only may resist these demands by surgeons, but also impose further restrictions through the unintended consequences of managerial arrangements, such as a shortage of nursing or ancillary staff, instruments or other facilities. The conflict between clinicians and management at a day-to-day level is thus apparently a consequence of a desire by surgeons to process their patients through surgery, in a manner which they consider most appropriate. Conflict arises when these wishes are thwarted or threatened by constraints imposed through institutional arrangements.

Full discussion of this case study has been deferred to the next chapter, to preserve the integrity of this series of cases. Suffice it to say that this second case study has added to the plausibility of the hypothesis that an emphasis on patient passage through the OT is highly valued by surgeons. However, the question which has now been raised is thus concerned with identifying precisely what characteristics of patient passage through surgery determine it as appropriate, in surgeons' perceptions. Is it simply concerned with quantity? Or it is something to do with the quality of that passage? It is in an attempt to answer this question that the final case study in this series was devised. It is intended as a crucial case study, which will tease out the relative significance of physiological and social status changes during surgery, and the process whereby surgical power is mediated and reproduced.

Case study 3: Day case surgery at General Hospital

In the early spring of 1988, a day case surgery unit was opened at General Hospital, marking the culmination of an eighteen-month period of discussion and preparation which was, coincidentally, the period during which fieldwork was being conducted. The day case option for surgical treatment was a topic which the researcher raised with informants throughout this period, and it was therefore particularly fortuitous from the point of view of this research that the planning and consultation process, and eventually the opening of the designated unit occurred during the fieldwork period. The visits to the day case unit were the last data to be gathered, and from a methodological perspective are well suited as a case study, given that the initial analyses of the principal ethnographic material and the theoretical framework of the study had been derived by the date upon which the day unit was opened.

Day case surgery (henceforth DCS) requires definition for the purposes of this case study. Surgery has been conducted on an out-patient or day admission basis for very many years (Royal College of Surgeons of England, 1985:1), principally for very minor conditions probably not requiring general anaesthesia. More recently, patients have been selected for day surgery despite a requirement for a general anaesthetic. These cases fulfil a Royal College of Surgeons definition of a surgical day case as 'a patient who is admitted for investigation or operation on a planned non-resident basis and occupies for a period a bed in a ward or unit set aside for this purpose. The concept of "admission" is .... retained to emphasise the need to observe proper admission procedures or records' (ibid: 3).

When fieldwork began at General a number of day cases were taking place, and were observed by the researcher, principally in plastic theatre. Some terminations of pregnancy and a range of gynaecological investigative procedures were also being

conducted on a day basis in Theatre S, while some endoscopies were day cases conducted in the endoscopy theatre. Patients having these procedures would either be admitted to a ward, or would be taken to the anaesthetic room directly. Both theatres had recovery rooms which doubled as a 'ward' from which these patients would be discharged.[5] However, for the purposes of this study, the definition of DCS excludes these cases. DCS here is used to mean only those cases admitted to a designated DCS unit on a planned non-resident basis. This definition has been adopted in order to control the case study, for theoretical reasons which will now be outlined.

Day surgery: a sharply defined status passage?

The reason why DCS was selected as a crucial case study derives from the fact that, by its very nature, day surgery emphasises the operation, and by limiting the hospital stay to a few hours before and after the procedure, de-emphasises these periods. Taking the main hypothesis of this study - that surgery demonstrates in a highly condensed form, the social re-classification and status passage from victim to survivor associated with all healing, a number of predictions were made before data analysis began. As will be seen, these predictions were not supported. Discussion at the end of the study, and in Chapter 9, will consider the utility of these disconfirmations.

Preliminary propositions

1. Surgical healing will be at its most powerful when it clearly demonstrates its capacity to heal.

2. Surgical procedures which place emphasis upon the transitional phase of healing - i.e. the operation - will be particularly highly valued by surgeons, as demonstrative of their role as the healer.

Day surgery should, it is suggested, represent just such a case of an emphasis on the transitional, at the expense of the separation and re-incorporation phases of a patient's passage through surgery. In the first study in this chapter, it was shown that surgeons do not regard these phases as important other than as necessary concomitants of the business of operating; their discourse constantly referring back to that phase, or to the possibility of discharge, another potent indicator of successful status passage. This case study however, also permits a refining of the findings of the second case study. It will be recalled that this case study demonstrated that the demands surgeons make on surgical management in order to maximise the throughput of patients, would lead to conflict where these demands oppose the management/nursing definition of what is appropriate (from the surgeon's perspective) to the process of surgical healing. In DCS, the surgical definition has apparently triumphed without conflict with the management/nursing definition: surgeons can devote themselves to operating, pushing as many patients through the hospital as they can physically include on a list, without at least one limitation: that imposed by availability of beds - the unit being designed to ensure enough space for pre-surgical and recovering patients. A patient on a DCS list may have been discharged before the list upon which s/he was included has even been completed. The surgeon may see her/him only when unconscious upon the table, particularly if the pre-operative examination is conducted by a junior. The fact of discharge demonstrates 'success'.

While the surgical definition has thus incorporated the managerial definition, this may not be the case with the nursing staff, for whom the patient's healing is defined through the process of care pre- and post-operatively. As a corollary to these two propositions, it is therefore predicted:

3. That DCS will not be affected by the disruption and conflict witnessed in the second case study, but that the enthusiasm for this emphasis on the transitional phase of healing will not be wholly shared by the nursing staff.

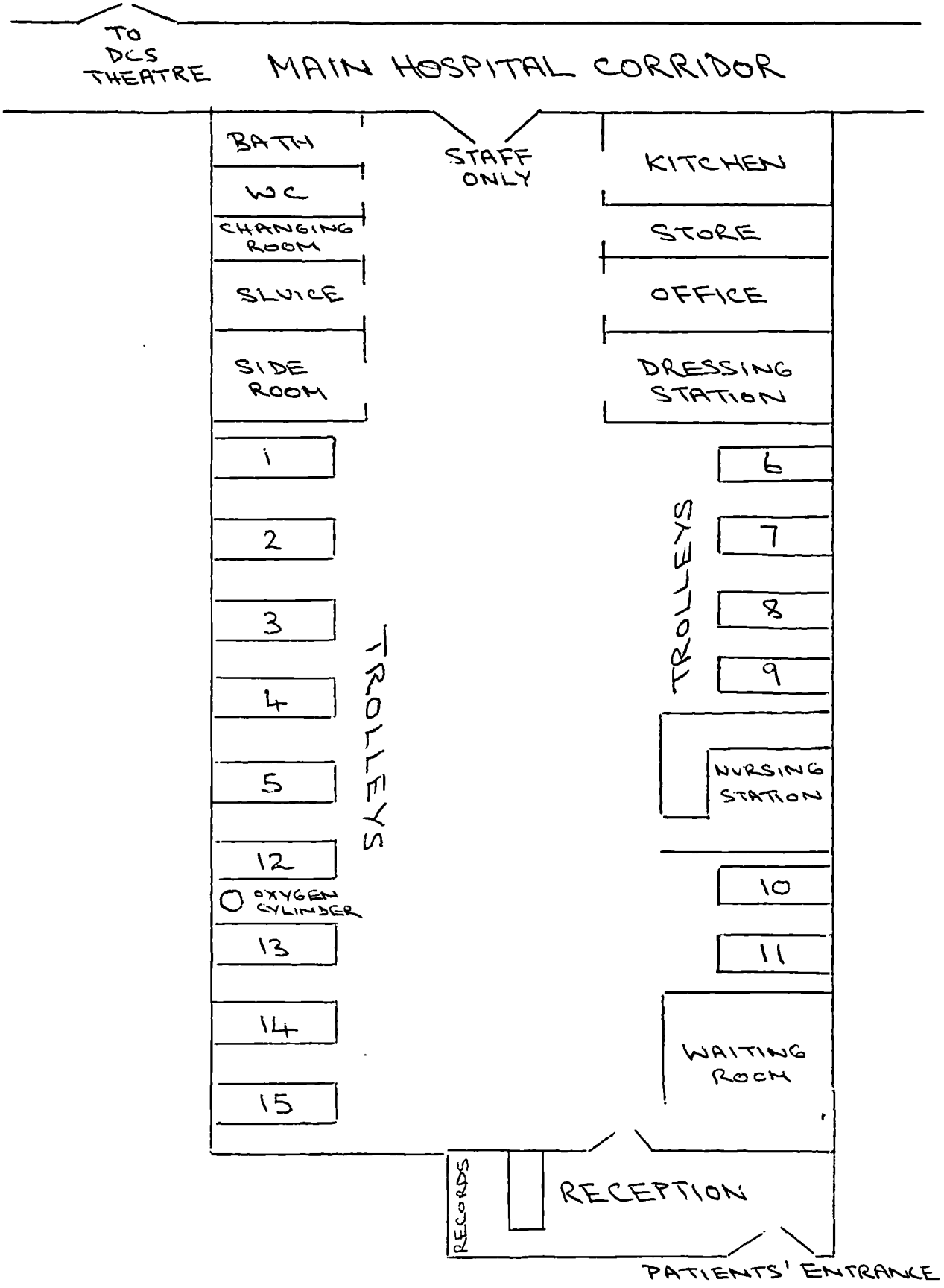
With reference to the analysis presented in this research report, DCS represents a test case, to the extent that an enthusiasm of surgeons for DCS will support the main hypothesis, while a lack of enthusiasm for DCS would have the effect of putting the main hypothesis in doubt. A less than fulsome welcome from other staff would also support the hypothesis that surgeons are extreme in their model of healing as status passage.

From a methodological perspective it is fortunate that this case study can investigate the process of introduction of a DCS unit at General Hospital in addition to the material gathered within the unit itself. Following a brief ethnography of the routine of the DCS unit, the support or otherwise for the above hypotheses from this data can be subjected to triangulation, through consideration of the context which led to the opening of the unit, and through interview material elicited prior to the unit opening, and comments of staff working in the unit subsequently.

A day in the General Hospital DCS Unit

The researcher paid a visit to the Unit some four months after its opening. The layout of the day surgery ward is shown in Fig. 8.3. The unit comprises a reception area, fifteen trolley-beds, which can be wheeled directly to and from theatre. Each bed area is provided with an oxygen line and suction. The nursing station is centrally situated, and towards the far end of the unit are offices, rest room, sluice etc. A door at this end leads to the main hospital concourse, and is situated almost directly opposite the entrance to the DCS theatre, one

Figure 8.3: The Day Case Surgery Unit at General Hospital



of the twin thoracic theatres, now re-designated. Patients are not permitted to use this entrance to the Unit, and those who do so are directed to the other end, which opens to the outside of the hospital. Patients are processed by a receptionist on arrival, and asked to sit in a waiting area until nursing staff are ready to allocate them to a trolley.

Staffing

Clinical manager Dr F; Ward sister; Staff Nurse; State Enrolled Nurse; two nursing auxiliaries.

A day in the General hospital DCS Unit 1/7/88

8.07 a.m. The first patient arrives at reception and, having been seen by the receptionist is taken by a nurse to trolley-bed 8. She sits on the edge of the bed, the curtains are drawn and the patient undresses and puts on a surgical gown.

8.13 a.m. As patients arrive they are asked to wait in the waiting area. They are called to reception, and checked in by the ward sister. A patient has arrived unexpectedly, having not confirmed his appointment. Sister: "Sorry, we had a place, but it's been filled. You'll have to starve next week."

8.17 a.m. Patients in beds 9 and 4, accompanied by parents.

8.25 a.m. House doctor arrives, checks list, and goes to bed 2, now occupied.

8.26 a.m. Beds 3 and 10 occupied by patients.

8.30 a.m. Bed 4 patient brought from waiting area. A wait of 15 minutes has developed as patients are processed into their places. Patients are ticked off on a board at the nursing station, and details of transport home noted: "Mother"; "Mum staying"; "We will phone". Plastic identity bracelets are attached to patients once in bed.

8.32 a.m. Anaesthetist Dr R sees patient in bed 6. "How about if we don't put you to sleep?" Dr R sees the patients in turn, some are given pre-medication, depending on the procedure, and the history of the patient.

8.35 a.m. Bed 5 patient arrives. Patients are scheduled for

phased arrival up to 9.00 a.m.
8.52 a.m. Porter arrives, and wheels the patient in Bed 1 to theatre. Manager Dr F arrives and confers with ward Sister.

The DCS unit is servicing three lists today: in the designated theatre, an oral list (beds 1-5), an orthopaedic list in theatre S (beds 6-8), and a plastic list (10-11).

Patients are taken to the three theatres when called for.
10.15 a.m. Patient 1 returns from recovery. The nursing staff are trained in recovery, and are detailed to ensure the patients are ready to leave at the appropriate time.
Sister: "We try not to give strong post-operative medication, and not necessarily a pre-med. We need to ensure a patient can get here and back without driving. If we aren't happy that a patient has recovered, or there is a problem with getting him home then they may have to be kept in."
Researcher: "How often does this happen?"
Auxiliary: (looking through records) "Eight times in June .... 26 since February."

DCS Theatre
11.05 a.m. Patient is brought into DCS theatre, having been anaesthetised after a 30-minute wait in the anaesthetic room. The operation begins - the removal of wires following a road traffic accident two weeks previously.
11.15 a.m. Dr R (anaesthetist): "Is it time for the next patient?"
Mr P: "No." (to researcher) This is an ideal case for day surgery. It would be very painful under local anaesthesia, and time-consuming because we have to do it all the way round the jaw."
11.35 a.m. Jaw wires removed, Mr P begins on the wires which have been inserted through the eyebrows. These cause considerable problems, and there is haemorrhaging, which causes adverse commentary from the anaesthetist, and apologies from Mr P.

11.45 a.m. First wire removed.
11.50 a.m. Second wire removed. Mr P: "OK, we're sewing up now."
11.52 a.m. Mr P: (to anaesthetist) "OK." Dr R sends for next patient.
11.56 a.m. Patient is taken to recovery.

DCS Unit
12.30 a.m. Patient in bed 2 discharged. Relatives of other patients are waiting for decision on discharge, which is made by ward sister, after consultation with clinicians[6].
12.40 a.m. Sister, SEN and one auxiliary go to lunch, leaving staff nurse in control of unit.
1.05 p.m. The oral list is complete. Mr P comes to the unit, and leaves some instructions with the staff nurse.
Patients are discharged throughout the afternoon.
4.40 p.m. Unit closes.

The ethnographic data documented in this snapshot of the DCS Unit at General indicates the relatively smooth processing of surgical patients through the Unit and theatre, as a consequence of the managerial arrangements institutionalised within the DCS Unit. To evaluate the significance of this model of surgical healing, this case study will now turn to the context in which DCS was implemented at General hospital.

DCS at General Hospital: the background

As Gabbay and Francis (1988) point out, much has been published in the medical journals upon the topic of day surgery over the past twenty years, with most reports favouring an increase. Estimates of the amount of surgery possible on a day basis vary from under a quarter to as much as half of all surgical cases. DCS is now being conducted in designated units in many large hospitals, although the reality is that the amount of DCS has not reached the levels suggested by its advocates (ibid:1249).

The commission on surgical services (Royal College of Surgeons of England, 1985) provided guidelines for DCS which amounted to an enthusiastic endorsement of it as a complementary system to conventional surgery, which will reduce waiting lists, reduce the costs of surgery, reduce disruption to patients' working and domestic life, and increase the proportion of consultant surgeons in the surgical cadre (ibid: 1-2).

This backdrop of interest within the profession, and the subsequent high profile creation of DCS units at two major centres of surgical excellence, was certainly a factor in developing an interest among surgeons at General in DCS, and has been seen, a small proportion of the surgical case load was being conducted on a day basis, although without a designated unit. In early conversations with surgical informants, and a number of anaesthetists who were interested in surgical management, the creation of the designated unit at General was perceived to be a consequence of this backdrop of enthusiasm within the profession.

However, it subsequently transpired that the decision in November 1986 to set up a working party with a brief to consider and plan a designated DCS unit, was management-led. In 1986, a policy document was circulated at District level setting out a strategic planning brief for hospitals in the district. The re-organisations and rationalisations identified in this document as necessary in terms of efficient use of resources held, inter alia, implications for surgery at General Hospital. These principally arose as a consequence of the geographic location of General, in the north east of a large city served by two further general hospitals ("Western" and "Northern"), each managed, for historical reasons, by a different district health authority. The significance of this proximity was two-fold. Firstly, close comparisons were possible due to the similar sociodemographic characteristics of the populations served. Secondly, a degree of duplication of

services in a number of specialties had arisen historically, and were now subject to rationalisation.

At General hospital, the definition of 'general surgery' had been widening to include vascular and surgical gastro-enterology. The consequence had been a diminishing role for thoracic surgery at General, and a resulting under-utilisation of services, including a twin theatre suite built to palatial proportions for a once-planned cardiac surgical service. By the mid-1980s, Western hospital was in the process of creating a prestigious cardiac surgical unit. This centre of excellence would draw further work from thoracic surgery at General. The policy document identified this problem, but avoided a decision on closing thoracic surgery altogether:

> EXPECTED CHANGES IN PRACTICE AND WORKLOAD
>
> 3.7 A number of options are being explored for the future of Thoracic surgery. The minimum effect on the general Surgery Service will be the equivalent of the existing overlap with Thoracic surgery. One option, though not the preferred option for the long term, allows the Thoracic Surgery centre to remain at [General] hospital within a confederation of surgical specialties inclusive of General surgery and others, it being obligatory for those concerned to recognise the complementary roles of Thoracic Surgery and General Surgery, to maintain an adequate level of service to meet the long term demand for Thoracic surgery and to ensure the underutilised resource is redeployed to meet real need.
>
> 4.1 .... [General] hospital will not provide a specialist Vascular Surgery Centre.

The consequences of these elements in the Strategic Plan were translated into a language of reality by the hospital's commissioning officer, Manager H:

> "Thoracic surgery has become something of an anachronism. Much of the work is now done in general surgery, and operative intervention in the very elderly, for instance for carcinomas within the chest, is very questionable in terms of outcome and quality. So they (thoracic surgeons) are being squeezed." (Manager H: 24/9/7/5)

This squeezing took the form of the closure of one of the three wards allocated to the sub-specialty, and re-allocation of some of the theatre time to other surgery. Thoracic surgery was prevented from being completely run down by the intervention of the Unit general manager, after a meeting in July 1987, when the thoracic surgeons argued that they had been rationalised as much as possible. (Field Notes 24/9/7/5)

As will be seen, this change in emphasis had a consequence for the development of DCS at General, in that it freed ward and theatre facilities. However, it was admission data in the Strategic Plan which had the most immediate effect upon the creation of a DCS unit. The plan provided comparisons for the year of 1984 of the proportion of day surgery at General and its associated hospitals (5.3%), with Western (17.6%) and Northern (14.5%) general hospitals, with the region as a whole (18.4%), and for the whole of England (20.3%). The Strategic plan commented:

> 1.8. A feature of the [General] hospital services is the apparent very low proportion of work conducted on a day case basis, compared with other authorities.

EXPECTED CHANGES IN PRACTICE AND WORKLOAD

3.8. The proportion of the workload carried out on a day case basis will rise to 20% .... an increasing number of referrals will be suitable for day case lists.

4.5. Special day case facilities or a special day case organisation will be provided for a minimum of 700 day cases per annum.

These management-led decisions were therefore the backcloth to the formation of a working party at General in late 1986 with a brief to consider the creation of a designated DCS unit. The chair of the working party was consultant anaesthetist Dr F (who later became clinical manager of the DCS unit), its membership comprised a consultant surgeon, another anaesthetist, the operating department and in-patient service managers, the Unit accountant and the Unit planner, and a physician involved with endoscopy. The working party invited submissions, and its existence was publicised within the Unit. (Interview with Manager H 24/9/7/2)

Staff attitudes to DCS

During the period of discussion, the researcher was able to elicit comments on the principle of DCS from a range of informants, some of whom were giving evidence to, or were members of the working party.

Mr P (oral surgeon): We seem to be ludicrously behind the times here. I have just done a case which could have been a day case. All orthodontics and soft tissue work, cases which only require a general anaesthetic because the patient is disturbed, could be done as day surgery. It would make no difference to me. The boys (house-doctors) will be in to clerk the patient, and make sure he does not

have a cold, check the right X-rays are there ....
Researcher: What will it mean in terms of making up a list?
Mr P: At the moment, we make up the list. With day case surgery, the administration will pull patients off a waiting list which will have been vetted by me as appropriate. At out-patients I will make an assessment, and will have to make sure they have a post-operative appointment - I'm not sure how that will work.
Researcher: What are the advantages for you?
Mr P: I did not have the all-day list which I wanted. Now with the day case unit I will have. I had to cancel a Wednesday clinic, but the day case unit has given me the opportunity to get what I wanted. I can mix day case and non-day case patients, it does not matter one iota whether it is a day case or not in theatre, it makes no difference to the nursing staff. It may make a difference to my boys, who may have to come in at 8am.
Researcher: Will it mean you can do more cases?
Mr P: At the moment I do 16 operations a week on average. I cannot think about increased turnover, because we always get it wrong. (Interview with Mr P 4/1/8/1-4)

Mr P's enthusiasm was thus based upon the opportunity to streamline pre- and post-operative routines of the hospital to suit his preferences for particular techniques of surgery in particular cases. Once the Unit was opened, his enthusiasm was undiminished:

Mr P: "It's terrific. I get two lists a week. Five patients on Friday, three or four on a Tuesday. I'm pushing the work through, a lot of minor stuff which is a money-waste to have in for two nights. I put the patients on the waiting list - it requires clinical acumen to decide who should be a day patient. If the procedure is technically quick that's better. Patients who don't like

> local anaesthesia, but will take it because of the length of the waiting list, can now have a general. I suspect we have generated a lot of work. (Interview 1/7/8/5)

This surgeon thus perceived the advantage in management terms - the efficient use of services, and the provision of appropriate treatment. He was not actually carrying out more surgery, rather he was carrying out "better" surgery.

These "managerial" arguments for DCS were considered in a more negative light by other informants. The anaesthetist Dr J identified an unwelcome trend in moves towards DCS.

> The supposed enthusiasm for providing day surgery within existing facilities is part of the thirst for funding to reduce waiting lists. Administrators would say they only act on medical advice, but with the day surgery proposals, the decision has come from the top, as pressure to reduce the waiting list, even if it's inconvenient to people. Is this approach going to be applied to other areas of practice? I am not convinced that there is enough work for a day case unit here. (Dr J 29/1/7/1, 6; 23/2/7/6)

Another anaesthetist who had doubts, perceiving DCS as a management-inspired model was Dr R, who made these comments to the researcher during an oral surgery day-case list:

> Day case surgery is a religion; the point is to make patients better. We have to ensure that day-case patients are not disadvantaged, and feel comfortable. Patients who come in for head and neck things get bashed around a lot. There's an idea that because it's teeth, it's minor - surgeons don't understand that there may be a great deal of bruising and pain. This patient is going to be black and blue afterwards.
> I want to get children put further down a day list,

> because they come in in a real hyped-up state, with Mum virtually hysterical. We will get them down the list, but it takes four weeks to get anything done. (Dr R 1/7/8/5-6)

The anaesthetist who had developed the greatest enthusiasm for DCS was Dr F, who was to become chair of the working party, and eventually clinical manger of the DCS unit. The first interview with Dr F, nine months before the unit opened, despite being conducted in theatre during a list he was anaesthetising, had the feeling of a meeting with management.

> Developing day surgery is a matter of resourcing and logistics. It does entail a change in surgical practice - but not so much in terms of technique as in patient management. The research that is needed concerns feasibility - what kind of surgery might be done, where it is to be done, and taking into account what day surgery is already being done, consider ward design and operational policy. Surgeons will only change if they are forced. (Dr F 24/6/7/1, 4)

This latter remark may have been prescient, as subsequently, in addition to the assignment of operating department manager Nurse F to take day-to-day responsibility for both the DCS theatre and the ward[7], Dr F was appointed as clinical manager of the DCS unit, reflecting the need for a clinician (rather than a manager) to negotiate with the surgeons to change hours of service and arrangements which had developed over a long historical period. As he himself noted in a second interview:

> Dr F: Doctors don't like to be told what to do by administrators. So it's necessary to have some sort of interface between the doctors and the administration. I understand the doctors and can talk to them, and also have respect for the managers. It's down to personality.
> Researcher: What's it like being a manager?

> Dr F: I've got a lay manager's job, which is quite nice. I go round and solve the problems, giving broad directives, seeing the nurses are happy, seeing colleagues and saying 'It can't be done'. When it comes to finance, I need advice from professional managers. (Dr F: 1/7/8/2-3

An interview with the commissioning manager H during the planning of the Unit identified further antagonism from clinicians. The decision by the working party to set up a designated unit had met with considerable opposition from the thoracic surgeons - who were losing one of their two theatres as a consequence, and who eventually complained to the Unit General Manager that they would have to reduce their turnover of patients if squeezed further. (Interview with Manager H 24/9/7/4-5) There was also a submission from consultant general surgeon Mr L strongly opposing the proposal:

> "In terms of modern technology - both investigative and operative - it (a designated DCS unit) is an irrelevance, and in terms of bed usage it is out of date. It is undoubtedly of some use in a badly run team or organisation, but it is of no use in an efficient system. With modern technology, the accent on diagnosis falls on the out-patient clinics, and patients reach the ward fully worked up for surgery. Therefore no beds are needed in any amount for investigations. Occasionally there is a need, but it is too small to be important. In terms of surgery, day beds make no difference if a team's time is already saturated with theatre work. Any good team uses its theatre time to a maximum, so additional day beds are an irrelevance. Finally, a ward dealing with major surgery runs best if the pressure is off every now and then. This release is afforded by the 'day-case' and allows beds to be available for evening emergencies.
> Day beds become useful, where excellence is a rare bird."
>
> (Submission from Mr L to DCS working party 9/12/86)

This discourse suggests a rejection of managerial incursion upon clinical judgement to this submission. 'Excellence' is an efficiency less concerned with management-inspired classification of patients between day unit and traditional in-patient treatment, but with the provision of appropriate pre- and post-operative care provided as a consequence of clinical decisions, based on accurate surgical diagnosis. This response is interesting, and is analysed further below.

This conflict, noted also in the previous case study, was the source of the enthusiastic Mr P's only doubt:

> I'm not totally sure about the division of responsibility for patients between the day-case unit manager and the consultant surgeon. It's just a mini-doubt, but I would not expect the ward to discharge my patient at five-o-clock without my say-so. (Mr P 4/1/8/7) (See Note 6)

Manager H and Dr F responded to this antagonism as examples of isolated Luddism, which would soon collapse once the Unit was in use. However, as it transpired, such opposition had not been resolved four months into the DCS Unit operation. Despite the availability of the unit, it had not been adopted for use by the surgeons as had been hoped. Dr F described the situation and his plans in an interview at that time:

> The problems are that we have not got a unique unit, with unique sessions - the unit supplies patients to different mixed lists. The surgeons are not involved in the Unit. The clinicians have to change the emphasis, but unless you push them, then there will be no change. We have provided the facility, so they will see it and decide to use it. On the other hand, the wards are delighted, not having to deal with day patients.
> When the two general surgeons come, then there will be

> pressure on beds in the Unit - for instance for gastroscopies, ten on a list, under sedation. General surgery hasn't been enthusiastic, because there's nothing on the waiting list except varicose veins, and it's difficult to know whether they are suitable for day case surgery. A lot of 'lump and bump' is being done by plastic surgeons. Mr [X] is very good at doing bat ears, but it's very boring. Day surgery routine operations are boring. Plastic surgery had money from the Waiting List Initiative, and we provided a facility for a day list - they say the waiting list is not a problem.
> The neurosurgeons are now doing micro-discs on an out-patient basis. They are very determined to have a go at day case surgery, within the safety limits. I have my doubts, but I will encourage it to see if it works - there will be a lot of discomfort, and possible complications.
> (Interview with Dr F 1/7/8/1-4)

This summary, of aspirations and a few firm plans, thus marked a lack of enthusiasm for the DCS Unit among clinicians at General some months after its inception. One other negative comment is worth documenting - from the Unit nursing staff:

> Staff Nurse S: We don't see the patients ill, and then getting better. It's dissatisfying working here.
> Nurse Auxiliary: There's no time to fill in a care plan for an individual patient, so we can't give them appropriate care.
> Staff Nurse S: We had a man yesterday, and because I hadn't got to know him even for a day, I couldn't give him the reassurance before the operation. I felt like a shop-keeper or a hairdresser. I'm looking forward to getting back to recovery. (Field Notes 1/7/8/4)

The day-case procedure had reduced any possibility of significant care input into the surgical patient's stay in

hospital. By emphasising the operation as the mark of 'success', the significant of recovery, and also of preparation for surgery, where nursing staff have an input, had been down-graded to the level of management of bodies, and efficient use of spaces.

Discussion

It must be concluded that the introduction of a designated DCS unit at General hospital was not greeted with enthusiasm by surgeons. Four months after opening, only one surgeon was using the Unit for day lists, a number of others were mixing day cases and in-patients on lists in the DCS theatre. General surgery had not yet responded with any use of the facility. Mr P, the oral surgeon's reasons for using the Unit are also of interest. As was noted above, he did not do more surgery as a consequence, but what he perceived as 'better' surgery. He liked the flexibility that the Unit provided, the opportunity to have the all-day list he had wanted for a long time, and to streamline pre- and post-operative arrangements to suit what he perceived as appropriate for his patients. His only qualm was over the possibility that he might lose the authority over discharge following surgery.

The vehement intervention by Mr L, the general surgeon is also worthy of further analysis. Day surgery is denigrated in moral terms - it is the opposite of excellence, of use only in inefficient surgical teams. In a well-run team (which therefore has no need of DCS) patients are prepared pre-operatively for their surgery, in that they have been diagnosed at out-patients and fully worked-up in terms of tests etc. before admission. To use beds, even on a day basis, for patients who are only in for investigation, is itself inefficient and an indicator of poor diagnostic capability. Nor is quantity the measure of good surgery, good surgery is appropriate management which permits a

balanced mixture of elective and emergency, busy and slack periods.

Both these discourses indicate that DCS possessed characteristics which were unattractive. For Mr P, it was tangential, unintended consequences which attracted him to the Unit. For Mr L, it was a management inspired concept which would prevent appropriate (in his perception) surgery from being conducted.

This lack of enthusiasm among clinicians at General hospital for DCS within a designated unit, and the finding that the instigation of that unit was management-led, and perceived by its protagonists in managerial terms; must force the rejection of proposition 2, as set out at the beginning of this case study: that surgeons would be enthusiastic for a model of surgery which enabled them to emphasise the transitional aspects of surgical healing, reducing the pre- and post-operative components of the process. There is, however, some support for hypothesis 3, the prediction of a low level of conflict between surgeons and management in the day-case OT, and a lack of enthusiasm among nursing staff for DCS.

It is therefore necessary to once again refine the hypotheses which have been generated in the entirety of this study. What can be identified from the case of DCS is that rather than it being surgeons who in general are enthusiastic about this method of processing patients, it is management and those clinicians such as Dr F who have adopted a quasi-managerial role, who perceive this as desirable.

A re-reading of the Royal College of Surgeons' document on DCS (RCSE, 1985) in the light of this insight, indicates that the arguments put forward in favour of day surgery are primarily managerial concepts. Issues of clinical judgement and patient preference are both discounted, and used to support these

arguments:

> Many surgeons .... have been concerned about the management of post-operative pain and the development of complications where the patient cannot be observed. They have often been unconvinced by the economic arguments. .... It is now recognised, however, that resources will never be entirely adequate to support all that surgery has to offer, and that we must all be conscious of the need to make the most efficient use of what resources there are. .... day case surgery provides a useful facility and a very great convenience, appreciated by many patients.... Day case surgery can be effective in reducing waiting lists. .... It can substitute for the unpredictable postponement involved in a waiting list a planned and readily available provision of surgical care. .... day case surgery is in no way inferior to conventional admission for those techniques for which it is appropriate, indeed it is better (RCSE, 1985:1-2).

Having made this assertion, the guidelines provide no evidence, but only details of how the policy may be implemented. The only support for day surgery comes in appendices devoted to queuing theory, and economic savings. A 300-word section on surgical teaching on day cases emphasises the teaching potential in relation to planning clinical management, rather than upon the surgery itself.

It is therefore apparent from the evidence of both this case, and the previous one, that while the enthusiasm for a smooth passage through surgical healing is an aspect of the surgeon's enterprise, it is most purely embodied in the managerial conception of the process. The previous study demonstrated how, given a routine whereby patients are processed from admission to discharge, management acts to standardize this routine. Surgeons conflict with this routine when, for reasons of

clinical judgement, they are not willing to accept the standard process with its rigidities and rules. The paradox of autonomy/constraint, which works at the level of policy, does so because surgeons and administrators have a common interest in processing patients through the healing space. The case of DCS has demonstrated an instance where this commonality has been stretched, and clinicians are resistant to the innovation. (For evidence that this is a widespread phenomenon, see Gabbay and Francis, 1988:1249). As was seen in the first case study of this chapter, the discursive techniques employed by surgeons act to identify surgical success. Wound condition and consideration of discharge date are important aspects of this discourse. It is therefore the absence of such indicators of 'success' in DCS, linked with the banal nature of much DCS work, that has led to this lack of enthusiasm for day-case lists and the designated unit, except among surgeons such as Mr P, for whom the unit provides opportunities for increased clinical judgement. Discharge is now a formality, a decision which can usually be made by nursing staff. Nor does the method offer much for this latter group - the nursing process has been reduced to body management, a model no longer favoured by the profession (Stevens, 1979; Riehl and Roy, 1980; Webb, 1981).

The study of DCS thus offers, in the form of a disconfirmation, a crucial case study for testing the hypotheses relating to the surgical enterprise and the passage of the patient from the social status of victim to that of survivor. At the limit, where transition is emphasised only in terms of efficient movement of bodies, rather than as a significator of the entire social status change being effected, healing personnel no longer consider that the process is appropriate to their socially defined statuses as healers. A managerial conception of surgical efficiency is inappropriate: managers are not sanctioned healers. This refinement of the model of surgery, resulting from this case, is discussed further in Chapter 9.

CHAPTER 9: DISCUSSION AND CONCLUSIONS

In this final chapter, two separate aspects of the study will be addressed. The first is the substantive question of the nature of surgical power. At the end of the first part of this study, the analysis had identified certain social structural modalities of power displayed by the unique techniques of surgery. The rest of the study has considered the significance of the status change which these structures mark, for an understanding of the authority and privilege of surgery. Further case material has tested the model of healing as status change from victim to survivor, and this concluding chapter will consider the findings of these cases, and seek to thereby derive a refined understanding of the social meaning of surgery in Western culture - the relations of surgical healing to power and social structure.

The second issue concerns the methodology based upon 'analytic induction' and the case study approach, as outlined in Chapter 2, which has been adopted throughout this study. Hypotheses grounded in theory were used to suggest cases for study, which in turn have refined and focused the hypotheses. This chapter will evaluate the success of this methodology, with particular attention to questions surrounding the selection of 'crucial case studies', and the limitations of the approach.

Having evaluated these aspects of the study, this chapter will briefly consider the implications of the findings, for the sociology of health, illness and healing, and for surgery. It will conclude with a number of new research questions to be answered.

Refining the hypothesis - the case studies

The discussion in Chapter 7 upon the social significance of status change, and in particular the model of healing as status passage, ended with the hypothesis that the social organisation of surgery would reflect, at all levels, this status passage model of healing, and emphasise the over-arching importance of the techniques by which status change from victim to survivor is mediated, and surgical authority legitimated. Three case studies were drawn from the ethnographic data to test this hypothesis.

Case Study 1: Surgeons on the wards

In relation to the first case study, it was predicted that surgeons would emphasise the operation, down-grading all pre- and post-operative activities. The analysis found three themes in the discourse of surgeons when interacting with patients: the physiological condition of the patient, wound condition, and discharge/recovery. These themes serve to provide a re-classification of the patient. The first and second themes refer back to the operation, the carrying-off of which demonstrates that surgical healing has occurred. The third, by looking forward to discharge, demonstrates the new status as healed. As revealing here, as has been noted elsewhere in this study, are the silences. There is no discussion with patients, once surgery has taken place, of the pre-operative state, or of details of the operation, or of physiological prognosis. The discourse focuses on the future, and the new status that the patient faces as an 'ex-surgical patient'. Patients which do not permit such discourses are marginalised.

Surgeons use the three discursive themes to define the moral status of the patient, and consequently their own moral right to heal. 'Success' in surgery is thus implicit, firstly via the facticity of the operation, which in the ward environment is

significated via the condition of the patient's physiology and her/his wound, and secondly in the ability to re-categorise the patient in her/his new social status as healed. The themes thus legitimate the authority of the surgeon as healer. As such, this study of surgeon/patient interaction supports the analysis of the meningioma patient in Chapter 5, whose refusal to 'recover' robbed surgeon Mr C of his moral right as healer.

The techniques of surgery therefore provide a limen, from which the new focus upon discharge can be derived, in a way which is less obvious in the case of non-surgical medical interventions, where there is rarely such an identifiable point in treatment at which the sick person can be said to be 'healed'. The invasion and subsequent closure of the wound, procedures to ensure the sterility of that wound, and the maintenance of the patient's stock of Fitness are signified in the three themes of discourse. They supply means of social classification, regardless of, or in additon to, any physiological change.

Ward rounds contribute to an emphasis on the operation as the distinctive feature by which social re-classification occurs. The first case study thus provides further support for the hypothesis that surgery effects a significant status change at the level of the social. It is supportive also, of the proposition that surgical authority derives from this social re-classification: post-operative ward rounds demonstrate surgeons at their most authoritative - only one patient was observed to manage to even briefly set an agenda for the consultation, and had to write down her questions in order to ensure they were answered. A perceptive question in fact shook the surgeon's claim to authority, based on maintenance of the patient's reproductive capabilities (Field Notes 15/2/5/9 - Footnote 1, Chapter 8). By investigating a surgical setting other than the OT, this case has provided a useful probe to measure the plausibility of the hypothesis.

Case Study 2: The management of surgery

The second case study drew upon ethnographic data concerning the management of the surgical enterprise. It began with the proposition that, if the operation is the most important means by which a patient's status passage is signified, then the procedures involved would be conducted according to set rules and routines permissive of no disruption. Just as in non-Western ritual ceremonies, the correct and precise achievement of the routines is essential to ensure positive outcome, the same would be expected in the surgical setting.

The confounding datum, therefore, was the observation throughout the ethnography that disruption of surgical routine is a common occurrence in the OT. Investigation of this disruption should therefore enable a falsification of the hypothesis that the operation is the significator of status change.

A first phase of analysis determined the relationship between management and clinicians. Clinical autonomy was resolved in relation to institutional constraint at a policy level, via a consultative process. However, at the everyday level, such resolution was not possible if clinical actions contradicted institutional constraints imposed by management, the consequence would be conflict (see Fig. 8.1). With this framework, the next stage was to return to the ethnographic material, to identify the causes of conflict and disruption of routine.

One possible explanation was in terms of a 'primadonna' syndrome: surgeons are difficult people who, once inside the OT, insist on total submission of all to her/his wishes. Any structural constraint will lead to disruption if it conflicts with this absolute authority. The data collected throughout this study does not, however, support this as the underlying explanation of how conflict arises. The few instances of 'primadonna' syndrome witnessed by the researcher were

concerned with perceived inefficiencies on the part of others, the principal disruption was as a consequence of consistent absence of planning by surgeons in compiling lists, and its sequelae. A 'primadonna' explanation is insufficient.

This lack of planning manifested itself in the inappropriate allocation of cases to lists, the vaguest notion of the time a procedure would take when including anaesthetic and preparation time, and last-minute changes to lists (see Fig. 8.2 for a full list of disruptive factors). These were consequential, principally, upon the desire by consultant surgeons to maintain a flow of bodies through the OT while retaining clinical autonomy in terms of who to list for surgery on a particular occasion. At a policy level, this objective of moving bodies, making good use of resources, was by and large shared by management, and managers described the arrangements for surgery as organised to ensure this occurrence. Despite this agreement at policy level, at an everyday level, this consensus fails absolutely. The interviews with managers and surgeons demonstrated a remarkable attribution of culpability to other parties in the enterprise.

However, what now becomes clear is that the disruption is due to conflicting interests, or conflict between clinical autonomy and institutional constraint - conflicts which are effectively conducted outside the OT. Within the OT, routines are carefully carried out, corners are NOT cut, procedures are NOT hurried. Conflict, and consequent disruption, is not permitted to influence the actual procedures of patient passage through the OT.

It is to be concluded therefore, that what is an apparent shared interest between management and surgeons at policy level in achieving maximum patient throughput within available resources, is in fact illusory, based on differing conceptions and different meanings of the passage of the patient through

the OT. Whereas, for management this is purely an instrumental interest, in which the operation is merely one part, albeit the essential part, of the entire hospitalization process of the surgical patient; for the surgeon this is not enough, it reduces the surgeon to a cog in a machine which processes patients, it defines her/his part in the process as that of a technician. It fails to address the importance, demonstrated in the first case study, of the operation as the means by which a discourse on recovery and discharge may be initiated, providing the means to look forward, to see the patient into the new status, and in so doing ensure the surgeon's authority and privilege.

Whereas the institutional arrangements for surgery made by management are at least congruent with, if not identical to, surgeons' interests at the level of policy, at the level of daily activity, management-inspired constraints have the unintended consequence of threatening a surgeon's definition of the surgical enterprise. For the surgeon, quantity is certainly important, hence the problems which arise as a consequence of listing too many patients, cases which do not fit, ignoring the time taken for anything other than operating; but it is only through carefully following the rules of conduct and the circuits of hygiene in the OT that the surgeon ensures her/his moral right to heal is preserved. Quality as well as quantity is essential.

The case study suggests that while the management of surgery has constraining consequences for the status passage of surgical patients, these are unintended, and reflect the non-hierarchical relationship between management and clinicians in the NHS, and the role of 'advice', which acts only at a policy, and not an everyday level. The managerial definition of the surgical patient's career is an instrumental one, concerning itself with measures of efficient use of resources. The surgeon's definition may include this instrumentalism, but it

is something more - it concerns the surgeon's right to conduct surgery. While these definitions result in conflict, for the surgeon, everything must still be 'just so'. The techniques which define the status change, and ensure the surgeon's authority, can never be disrupted.

What transpires from this case study is that a confusing, and potentially confounding datum has been analysed, making discernible differing definitions of the surgical enterprise. The explanation of disruption as a conflict of definitions provides further evidence for the hypothesis that surgery is more than an instrumental process, that it has social significance as a re-categorisation of its patients. In addition, there are some interesting implications concerning the position of nursing staff in relation to management within the NHS. Nurses are constrained by management in a way which clinical staff are not. Management acts through nursing staff at all levels, to control the running of the hospital. Clinicians, on the other hand, have an insertion within the hospital not immediately concerned with this everyday activity of the institution. This may in itself reflect the singularity accorded to the healer in our society.

These two case studies together support the significance of the procedures within the OT as the focus by which the power of the surgeon is achieved, through the control of the resources of healing and the moral right to define the patient as healed. But they imply an additional, and essential focus - that of discharge/recovery. The careful prosecution of the special techniques of surgery enable the discourse on discharge/recovery, a discourse which assures the authority and privilege of the surgeon as healer. Discharge/recovery remains a de-focused issue for management, it is once again merely instrumental, a statistic of efficiency, which has nothing to do with the social process of healing.

This managerial definition can be clarified through an image of the hospital as factory. The nursing staff are line managers and workers, following management directives as to the control of resources and the raw material which is to be processed - the patients. From the outside, this factory machine might appear to turn out its products without any input from clinicians whatsoever - managerial imperatives on patient throughput exist independent of any actual clinical input. The absurdity of the model is demonstrated by its failure to define the products of this factory as healed. Without clinical input, that classification will not be applicable. The social significance of the healing role is in defining the status of the discharged patient.

To have been 'under the doctor' is to have accepted a regimen of healing, and to have had a label of 'healed' imposed on one. With surgery, the unique techniques demonstrate beyond doubt that healing has occurred. To be 'healed' is not to have had a physiological change effected, but a change in social status. To be healed merely requires the ministrations of a socially sanctioned healer, to be sanctioned requires the possession of authority and privilege - of power. To retain that power requires that it be legitimated.[1]

Towards a crucial case study

These two studies, then, have added to the plausibility of the hypothesis concerning the status change involved in surgery, and the importance of this change for the reproduction of surgical power. This hypothesis may be explicitly stated:

The power of the surgeon is reproduced on a daily basis through the legitimation of her/his authority (control of resources and actors) and privilege (moral right), entailing the successful execution of the techniques of surgical intervention, thereby enabling a discourse on discharge/recovery, by which a patient is successfully re-classified from the status of victim to that of survivor.

To test this hypothesis, which enshrines the significance of the achievement of a social status change in patients for surgical authority and privilege, and attributes the high status of surgery as a specialty within biomedicine to the unique and highly condensed symbols of healing which the specialty possesses, required a 'crucial' case study. What was required was a case which would test this hypothesis against the alternative position, which might be described as the instrumental hypothesis - that surgery was high status, that surgeons possessed authority and privilege simply because the surgical technique achieved success at a physiological level.

To find such a crucial study, it had always been accepted, would pose a difficult, if not impossible, challenge, given the problem of the under-determination of theory by data. The hypothesis to be tested would need to be specific enough to permit a real differentiation from alternative hypotheses, through the use of particular, limited, data. That might be impossible, given that surgery is an own-culture topic of study, an area of scientific biomedicine, invested with a discourse that did not acknowledge the social, and claimed a

significant rate of physiological success. However, once the bulk of the data had been collected, and analysis had supported the hypothesis concerning surgical healing as status passage, a possible crucial case study suggested itself from an unlikely quarter - the innovation of day case surgery (DCS). The researcher had been interested in DCS since the inception of the study, and had gathered data from informants, and eventually from observations and interviews in the DCS unit at General Hospital as part of the ethnography. It was when the data was analysed - and unexpected and negative conclusions drawn, that the possibility of using the data on DCS as a crucial study became clear. It is suggested that the lack of post-hoc validation, indeed quite the reverse, supplies an additional validity to the use of the case of DCS as the crucial study.

Case Study 3: Day Case Surgery

The ethnographic evidence documented in the third case study of Chapter 8 provided a clear picture of a general absence of enthusiasm for day surgery in the designated DCS unit, hostility and vehement opposition to the concept from some surgeons, and a dislike among nursing staff for the routines of the day case unit. Other data indicate that this absence of enthusiasm is not unique to District Hospital: a far lower level of DCS is being conducted nationally than the 25 - 50 per cent of all surgery suggested as appropriate by some surgeons (see Gabbay and Francis, 1988). The figures acquired locally indicated the very limited impact of the day case model at the time of the study.

Before analysis, the researcher had predicted that DCS would be a favoured model. It appeared to be the limiting case in a continuum of healing interventions, from the most diffuse regimes of medical treatment at one end, to this - a form of surgery which emphasised the operation, with its overt

processes of transition, and de-emphasised the pre- and post-operative phases of separation and re-aggregation. If the operation were the limen by which healing was defined, then as such it should be a favoured model among surgeons.

Data analysis demonstrated that the opposite was the case. Surgeons were unenthusiastic. The enthusiasm for DCS at General Hospital was found to be management-inspired, being shared by only a few surgeons, who by and large were already doing day cases, although without a designated unit and theatre. The wider context - the very slow take-up of the day surgery model nationally - was also quite opposed to the original expectation that it would be a favoured style of surgery. Why should this be so?

An explanation of this unexpected finding suggests itself only in relation to the most focused hypothesis, as set out above as a consequence of the plausibility probes of the two case studies. It is that DCS has instrumentalised the process of healing. It is a managerial version of surgery, where a conveyor belt of patients pass through the surgical space. Discharge, which the above hypothesis indicates is the esential aspect of the discourse by status change is significated, follows as a virtually automatic consequence of surgery - the surgeon may not even see the patient after the operation in many cases. Discharge has become a managerial, not a clinical decision, and the outcome is that the surgeon does not gain legitimation of her/his authority and privilege as healer. S/he has become a technician, a cog in the wheel of the clinic.

If physiological alteration were the only source of surgical power, then DCS would be a popular form of surgery, enabling processing of many patients. In fact, it IS popular outside the designated unit, where the procedures are not routinised, where the decision to keep a patient in hospital overnight may be made on the basis of clinical judgement without inconvenience,

because a patient already occupies a bed in a ward. The DCS unit denies the surgeon the opportunity to define a patient as healed: that definition is consequential upon managerial arrangements, by which discharge becomes a technicality.[2]

Conclusion: support for the social status model

The study of day case surgery, and its disconfirmation of a prediction of surgical enthusiasm,it may therefore be argued supplies a crucial case. It demonstrates, by having separated the purely physiological alteration effected by surgery from its social significance, the importance of the latter in defining the surgeon as healer, and consequently her/his authority and privilege. For the surgeon, her/his power depends upon the capacity to effect transformation of patients at a social level, in addition to altering physiology. Physiological change MAY be necessary, but it is not sufficient. Of course, one must take care not to make too exaggerated claims from one case, or it might be that the whole edifice of theory built up throughout the process of grounding and focusing in this study comes to rest upon this single case study. Evidence may be rallied from many points in this study to support the propositions; there is, however, within the third case study, evidence which strongly points away from the purely instrumental theory of surgical power, and toward the social status passage model. Perhaps to be secure in the validity of this model, further crucial cases are needed, if they can be found. The limitations of the crucial case are examined below. However, the examination of further cases is beyond the limitations of a study such as this.

The argument being put forward does not of course reject the part played by physiology in changing the surgical patient. Depending upon how one was to classify physiological 'success', then surgery could be demonstrated to be more or less successful as a biological intervention. That has not been the

principal concern of this study, although, as will be seen, there are implications for understanding the claims of surgery which flow from the analysis presented here. Rather, the focus has been upon the sociological topic of the power - authority and privilege - of the surgeon and of surgery. What the crucial case study makes less likely is that this can be explained in terms of physiological or instrumental success alone, and more likely that the authority and privilege derive from the social re-categorisation of patients which the powerful symbolic techniques of surgery significate.

What has been derived therefore, is a social model of surgical healing which is grounded in the everyday practices by which surgeons are legitimated as powerful actors. Throughout the study, the emphasis has been upon the meaning of the social structures significated through the techniques of surgery, rather than by explanations dependent upon macro or 'external' forces such as class or professional closure. It has been argued that to use such terms is merely to reify social processes of categorisation, which are far more intricate, and intrinsic than economic, political or legal forms of social stratification. These latter DO define the power of surgeons and surgery, but they are the outcome of these social categorisations of people and things, not merely the conditions.

This mutuality of agency and structure, by which social structures both mediate and are the outcome of agency, constitute the kind of perspective upon social cohesion outlined in Chapter 1, following the Giddens model of structuration (Giddens, 1984). On one hand, analysis of the situated, purposive activities and the bounded knowledgeability of actors involved in the surgical enterprise has provided data which has led to the theorising of underlying conditions. The techniques of surgery, the discourse on these techniques, the gaps, absences and discontinuities representing the bounds of knowledgeability, supplied the means by which concepts of

'Hygiene^{2}'; the dialectic of Illness/Fitness; and the status passage from victim to survivor were constructed.

These rules and resources of social structure were in turn the unacknowledged conditions of agency. The effects of these conditions upon the situated activities of those involved in the surgical enterprise were predicted, and tested in the case studies, enabling refinements to be achieved in extrapolating the social structural forms which determine the power of surgery.

The arguments for understanding surgical healing as a process by which a socially sanctioned authority removes a person from a socially dangerous position (victim), and imposes a new social status (survivor) were rehearsed at length in Chapter 7. The theory of status passage as concerning legitimation of social knowledge which was developed in this section provided the link by which to understand two apparently independent social phenomena - the healing of the patient and the power of the healer. By developing a theoretical analysis which saw these as intertwined, mutually dependent, aspects of a social process of classification, it has been possible to understand the everyday activities of surgical healing without recourse to macro concepts. The ethnographic material in the case studies presented in Chapter 8 has provided fresh support for this model, as a means for understanding the reproduction of surgical power through situated, purposive human activities concerning the enterprise of healing. This authority and privilege possessed by the surgeon is real, not a social construction of interaction, but the consequence of real social structures constraining, through the unacknowledged conditions of action, the bounded knowledgeability of actors. Surgical power constrains, but it also facilitates, for without it there could be no healing (in the sense of social re-categorisation). Without healing, there could be no surgical authority or privilege

This model of surgical power, as derived from the analysis in this study, may be summarised diagrammatically:

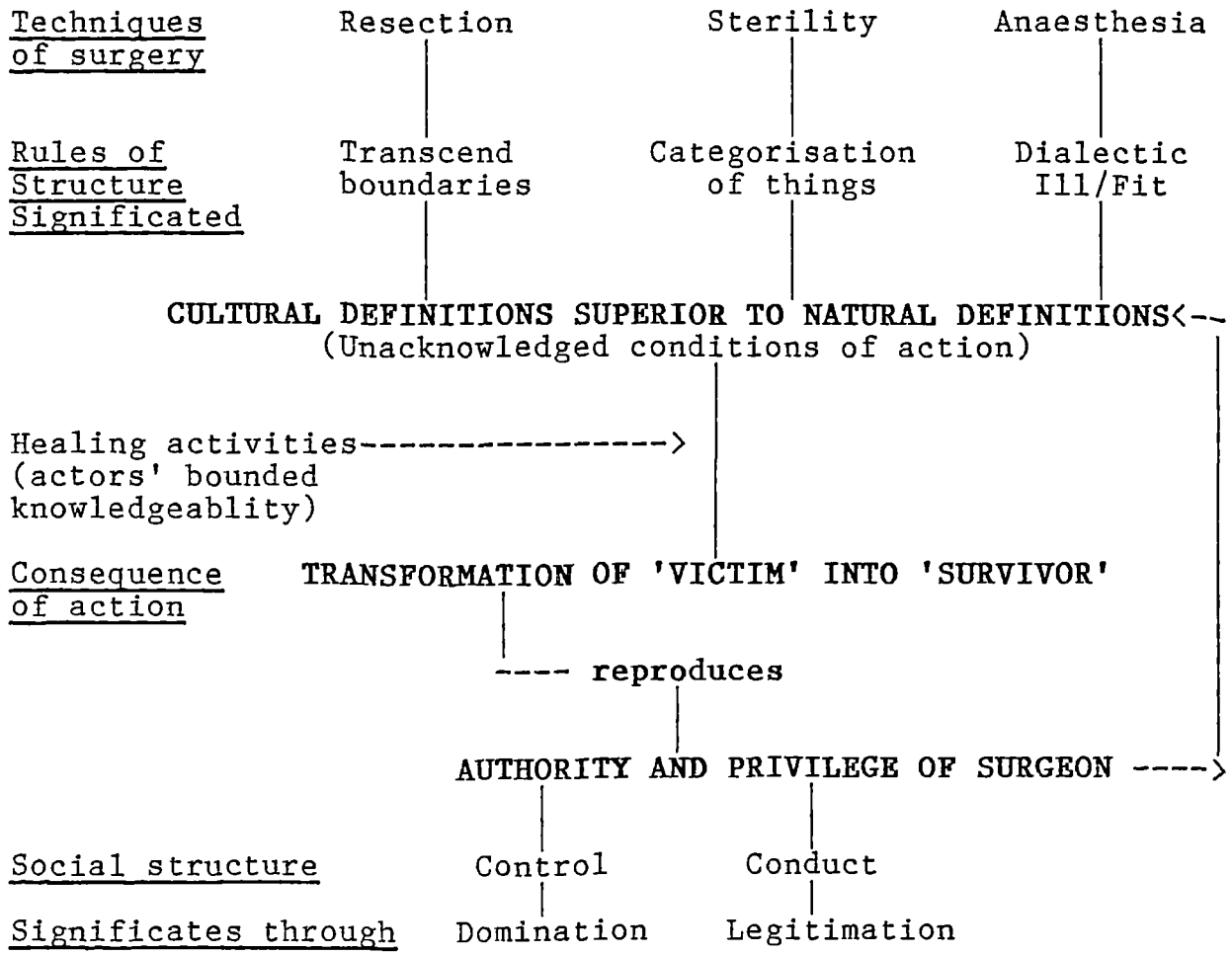


Fig 9.1: A model of surgical healing.

This diagram elaborates, and is grounded within, a non-functionalist, 'structuration', model of the sick role, as developed in Chapter 1, (see Fig. 1.2), rather than a functionalist model (as represented in Fig. 1.1.). (For a summary of Giddens' (1984) structuration framework, see Chapter 1 pp. 28-30.) There is no ascription of 'functional need' in this model of surgical healing - the epiphenomena of the healing process are explicable through the purposive activities

of those involved and the conditions of action (social structures) which are articulated through the authority and privilege of the surgeon, drawing upon the resources and rules deriving from the techniques of surgery. At the same time, it is a not a model which denies interests in society at large. The logic of the social transformation has, after all, been postulated to be the removal of a dangerous deviant, who may ask 'Why Me?', and the ensuring that dissonance between the time scales of capitalism and of the individual does not become explicit. Resources for surgical healing are provided, surgeons are accorded substantial financial reward, the membership of the surgical cadre is drawn predominantly from the white, male, middle class strata of society. But it demonstrates the social processes, which at a daily level, turn a physiological process of resection into a social process which allocates resources and moral positions to both patients and surgeons.

Turning briefly to the departure point from which this study began to analyse healing - Parsonian theory, a number of comments are now appropriate.

1. Against Parsons, it has been demonstrated that the source of the doctor's power does not lie in the pattern-variables of the physician role. The pattern-variables are no more than the bounded knowledgeablity concerning authority and privilege. Transgression of the pattern-variables will not have the dire consequences feared by Parsons. The pattern-variables are culturally specific, and possibly a result of historical accident.

2. Similarly, Parsons' observations upon the sick role are demonstrative of the bounded knowledgeability of how healing takes place in Western culture. It idealises a set of conditions under which a healed patient will pass into a positive social status. It fails to recognise that social re-categorisation takes place regardless of adoption of the 'sick

role' rights and responsibilities. When these are not adopted, the social category of survivor may incorporate negative characteristics such as stigma or marginalisation, which the survivor may not perceive as desirable. This point is considered below, in relation to the generalisability of the model.

3. As a corollary to this last point, to be ill is to possess an identity, a social position and a moral label. Healing offers a means by which these are substituted by ones perceived socially as more desirable. Patients are therefore likely to be active participants in the healing endeavour. But adopting the sick role may not be the only way of achieving this. The models of Szasz and Hollender (1956) all permit healing to result in positive re-categorisation. On the other hand, to possess a negative identity or moral label, such as Jeffery's (1979) 'bad' patients, may have consequences for the eventual label a patient receives.

4. The functionalist perspective upon healing, as adopted by Parsons, led to some peculiar notions concerning control, which are resolved within the structuration framework of the status passage model. Parsons separated the 'conscious' control exerted by the physician, which he saw as concerned only with objects - allocative control (Giddens, 1984): the resources of healing, from the authoritative (ibid) control of patients, which was a consequence of the 'social forces' by which the functional needs of society are met. These were mediated through the 'institutionally defined framework' in which a sick person is located following adoption of the sick role (Parsons, 1951:475). The first of these is the isolation of the sick person, which for Parsons demonstrated the insulation of the deviant from a wider circle of non-deviance, preventing group formation and any establishment of a claim to legitimacy (ibid:478). The second concerns the 'institutional features of the physician role' (ibid), i.e. the pattern-variables, presumably 'given off' by the physician in some way.

In the structuration framework of the status passage model, control of patients is the unintended consequence of the purposive activities which patients and surgeons pursue, through unacknowledged conditions arising from the authority and privilege by which surgery imposes cultural definitions on patients, creating the new social status position. These conditions are mediated through the agency of surgical staff and their control of the resources of surgery. One of these - the 'isolation' of the patient (an odd form of isolation bearing in mind the dominance of the cultural form of the hospital as locus of healing in Western medicine), is not from her/his sick associates, but from the non-sick. It is the phase of separation preceding re-integration. Given the social stratification within the constitution of the medical cadre, the substitution of social forces by constrained, yet purposive, human agency makes it impossible to maintain the consensus analysis of healing, as adopted by the Parsonians. Healing is imposed, it is the seemingly benign face of stratification which serves to marginalise, to isolate and to divide.

Implications for a general theory of healing

There is space here only to suggest the potential of the status change model of surgical healing for a generalised theory of healing. Suffice it to say that if Fig. 9.1 is shorn of its top lines referring to the specific techniques of surgery, the rest of the model stands logically. In place of the techniques of surgery, other techniques, including hospitalisation and the routinisation of care might be substituted. That specialties other than surgery do not possess the 'strong' techniques of surgery, as explicated in this study, perhaps is an argument to demonstrate why surgery is such a powerful significator of healing. High-technology interventions - special care baby units or, at one time, electro-convulsive therapy in depression, may add signification of healing. The 'caring' specialties of geriatrics and mental handicap significate the

status passage 'victim' to 'survivor' least. The power of the social status change model, it is suggested, lies in its offer of a unitary understanding of concepts and phenomena within the sociology of health and illness as stigmatisation, stripping, the sick role, the lowly status of the chronic sick, elderly and disabled people, and those suffering 'premature social death' (Bellaby, 1988) such as the mentally ill or brain damaged, as a consequence of an inability to fulfil normative social roles. For example, Freidson's six-way analysis of definitions of chronic polio outcomes (1970:241) in terms of extent of deviance and legitimacy, (see Fig. 9.2), may be understood as the classifications of the victim following clinical intervention/ classification.

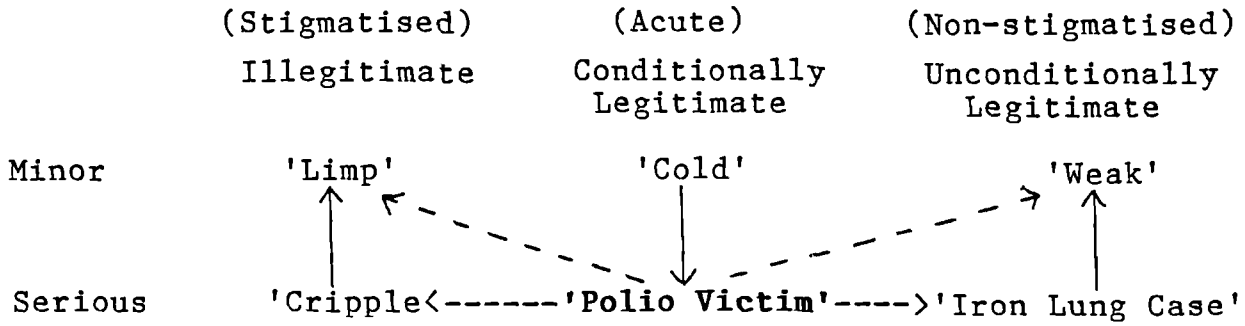


Fig. 9.2: Sequelae of polio (after Freidson, 1970).

All the outcomes mark a status change, from victim to survivor, but they are impositions of social statuses with different duties and rights. The 'unconditional legitimacy' of the chronic survivor is constrained, according to the status change model - it brings with it responsibilities, one of which is not to ask 'Why ME?'. The model thus offers valuable insights into the social position of the chronic sick and the disabled. The applicability of the model to other kinds of healing, Western and non-Western, is a further test of the model of surgical healing, for as has been argued throughout the study, the techniques of surgery do not of themselves confer the new status - that is a consequence of the authority and privilege of the healer. That is the root of medical dominance.[3]

There is therefore no reason to single out surgical healing as the one form which displays the characteristics of social re-categorisation. The generalisability of the model cannot however be assessed from this study, either in terms of the data collected, or in the space available.

Some methodological considerations

This thesis was written, as far as possible, in a way which reflected the structure of the data analysis, which progressed according to the logic of the methodology of 'analytic induction' outlined in Chapter 2. The chapters in the first part documented the substantive analyses of the techniques of surgery, progressing through ethnography and interview, and with the necessary and important excursion into the history of surgical sterility. This material, in the third, fourth, and fifth chapters, documented the gradual refining of hypotheses, as the data grounded theory and became organised by analysis. The coda, in the form of the discussion of the analysis in Chapter 6, recapitulated a point in the analysis where the need for a major theoretical framework to explain the data became clear to the researcher.

According to Eckstein (1975), and as documented in Chapter 2, the case study approach begins with cases which provide insights, allow generalisations, generate candidate theories, refine hypotheses, and use heuristic cases to stimulate theory and develop connections between data elements. The first part of the study used its case material in this way, and through the cross-cultural material introduced in Chapter 7, achieving a theoretical position which could be stated precisely and rigorously. The more difficult stage of analytic induction now faced the researcher - the systematic testing of the plausibility of the theory, and eventually, by crucial case selection, the support or falsification of the theoretical framework. This section, did of course, also provide an

opportunity to introduce further ethnographic material not so far used in the study.

However, as this study has sought throughout to go beyond description, it is necessary to consider the success of the case study approach, specifically the use of the crucial case. Two related problems arise in the choice and use of a crucial case. The first concerns the hypothesis to be tested. For a crucial case to be effective, it must be possible for the hypothesis to be falsified. That requires that it be precise, and stated in a way which permits falsification by data. The second problem is the corollary of the first, and the one that makes falsificationism such an inaccurate description of scientific method - scientists do not wish their hypotheses to be falsified, they wish them to be successful, and constantly make claims for their non-falsified theories (Kuhn, 1962).

Given this apparent double-bind, how can the researcher make any claim that his crucial case - day surgery - is in fact crucial? A claim was made that the specific hypothesis to be tested was falsifiable, in that enthusiasm for day surgery would falsify the argument that surgery was more than a mere instrumentalised resection of patients' physiology. In the event, there was not this enthusiasm, and the hypothesis was falsified. But consequently, was the case a crucial case? The reasons for the lack of enthusiasm could still be explained by other reasons - the boring nature of day surgery, or personal whim. The case in fact indicated that the lack of enthusiasm was something to do with locating day surgery in a designated unit, but the point still stands - has the case merely ruled out a few (but not all) different theoretical explanations?

Other crucial cases might now be proposed. This study has not addressed the influence of a surgeon's gender, as only one of the surgeons observed was female: this might provide a crucial case in relation to personal authority. Surgical innovation may

be an area where the theory might be tested, given the suggested significance of technology in mediating status change. But all these cases face the same ultimate paradox, one not limited to the case study approach, the failure of a falsification is not a proof.

From a positivist perspective, there can be no resolution to this problem, other than the one suggested by Lakatos (1978) in his defence of falsificationism - that research should progress as part of an extended programme. Perhaps then, the crucial case can only be used negatively, to rule out rival theories, to push theoretical refinement to its limits, always demanding more of theory, always introducing new data which can potentially falsify the theoretical framework.

For a work such as this, at some point a halt must be called. One achievement is that the theory of status passage derived in this study explains all the data gathered during the ethnography. No substantial portion of data has been excluded because it did not 'fit'. Regardless, therefore, of whether positivistic criteria should be adopted to judge the success of this study, or whether the derivation of a set of theoretical constructs which offer sociological explanation of an unexamined topic is sufficient, this particular research programme must in a sense remain unfinished - there must always be a new hypothesis to test, new data to which the theory may be applied.

One new hypothesis which has already been briefly outlined above relates to the generalisability of the theory of healing to non-surgical forms. New data might be derived from the practical implications of this piece of research, for surgery, and for the sociology of health and healing, outlined below, based upon new, refining hypotheses.

There are thus limits to analytic induction and the case study methodology, but it is suggested that these are limits which are necessary for method. The requirement for a crucial case study, which can be falsified, both protects analysis from developing theory which cannot be tested, and raises the possibility to refine theory and generalise. The method has therefore provided a suitable methodology for this study.

Surgical healing, power and social structure: implications and propositions for further study

For surgery

1. Surgery's possession of unique techniques which explicitly demonstrate the opportunity of a (culturally-defined) desirable change of status explains its popularity as a method of treatment. The possibility of changing resourcing of health services in favour of prevention will be limited by the exemplar of surgery as a means of healing already-present disease. Requests to government or appeals to the public for additional surgical facilities will be most successful where the planned procedures are most heroic (i.e. achieve the greatest social status change e.g. transplant surgery.)

2. The success of surgery at a physiological level should be subjected to detailed study. Concepts used to support surgical intervention such as five-year survival rates or 'remission', require scrutiny to evaluate the precise nature of surgical success. The natural history of particular surgical interventions should be studied to assess the methods by which surgery becomes a favoured form of treatment for particular conditions.

3. As a consequence of point 2, proposals for 'de-coupling' physiological 'treatment' from social 'healing' (see below) in the surgical enterprise may be derived. It is suggested that they would benefit patients, clinical and nursing staff, by

confining surgical intervention to physiology, extracting the social structural rules which significate power, and thus inequality and constraint. Some possibilities include:
(a) a massive increase in day case surgery
(b) minor surgery in out-patients and GP surgeries
(c) co-operative management of OT time on a daily basis between nursing staff, anaesthetists and surgeons
(d) regular review and publication of success rates for different operative procedures, publication of surgical mortality rates and mishaps in surgical management, and a reduction in media coverage of surgery
(e) responsibility for discharge to rest jointly between the operating surgeon, a colleague, and the patient's GP, in consultation with the patient and her/his family
(f) increased recruitment of consultant surgeons among women, ethnic groups and disabled doctors
(g) an altered career pattern in surgery which de-emphasises hierarchical power structures within the specialty and between surgery and other specialties; increases part-time appointments, a reduction in merit awards in surgery in favour of preventive medicine
(h) support for 'consumerism' among the sick.

For the sociology of health and healing

1. Medical dominance is a phenomenon which must be related to the wider social structure. It is not possible to see it as deriving from a series of episodes in the history of professional closure, or of the 'success' of Western techniques of removing or preventing disease. Medicine as an enterprise is fundamentally a technique of social control. The 'success' of its techniques at a physiological level is a source of substantial legitimacy for a process of classification of people, the significance of which is primarily social, not physiological.

2. A distinction must be made between physiological and social changes as a consequence of clinical intervention. The term 'healing' should be used to refer to the social processes of transformation of patients as a consequence of techniques intended to alter a perceived illness. Processes acting at a physiological or psychological level should be described by a term such as 'treatment', or other term, as appropriate to the method of intervention being adopted. It is axiomatic that any 'treatment' which makes claims to change or enhance its subject, is also a form of 'healing'. Healing however, may occur without 'treatment'. Analysis of the interaction of these two phenomena will enable explication of issues such as the labelling, compliance and the prestige of differing clinical interventions.

3. There is a need for further sociological research upon acute illness and its treatment/healing. Studies have typically observed patients as far as the out-patient referral, and from the discharge desk back into their biography. There should be detailed ethnographic and survey research into the social processes surrounding treatment and healing, and involvement in the empirical research programme surrounding the proposals for surgery outlined above, with the objective of reducing the power of medicine to socially categorise and control.

4. The sociology of health, illness and healing should seek to integrate the mass of applied research which has marked the success of the sub-discipline, within a framework articulating with the central theoretical concerns of sociology: social solidarity; stratification and the division of labour; power; ideology, belief and knowledge; control and autonomy; continuity, innovation and change. The use of cross-cultural comparisons and use of anthropological concepts might offer new insights in the development of this theoretical enterprise.

NOTES

Chapter 1

1. The most extreme example of this position is to be found in Heath (1981), where the opening sequence in the doctor-patient conversational interaction is subjected to analysis. The object is to develop an apparatus for the formal description of conversation, and as such Heath is uninterested in the particulars of the setting or even the substance of the encounter.

2. The important theoretical position known as social constructionism has also been influential in the sociology of health and illness. Wright and Treacher's (1982) anthology encompasses the range of perspectives covered by this label, from the broadly Durkheimian through historical neo-Marxian to Foucaultian (Armstrong, 1982). The relativism and apparent anti-humanism of the latter position is seen by some within the sub-discipline as a methodological advantage (for example Nicholson and McLaughlin, 1987), by others as an insuperable defect (Bury, 1986). Part of the disagreement may lie in judgements as to what level of analysis is appropriate to sociology (as opposed to philosophy or history). Bury and Gabe (1988) have posed a 'social problem' approach, which they argue is grounded within the mainstream of the sociological enterprise, as an alternative to the discourse analysis of the Foucaultian school.

3. Since Katz's fieldwork was conducted (presumably in the early 1980s), the HIV association with blood might be expected to have altered this categorisation, particularly in the US. In the present study surgeons were questioned about anti-HIV precautions during operations, the responses generally down-

played this aspect of contamination, supporting Katz's report of the transformation of blood from 'dirty' to 'clean' once an operation has commenced. Discussion with a surgical nurse in 1989 indicated that by this date, the threat of HIV had resulted in new practices to avoid contamination.

4. The 'privileges' which Parsons refers to in the extract above appear to be principally those concerned with access to the body surface or interior, intimate details of biography etc. (ibid:451-2). He does not explicitly associate these with 'privilege' in the sense of increased status, although this is implicit in his description of the physician's position in society (ibid:472-3). Parsons' analysis of the physician was concerned to demonstrate how the 'professional' attitude was opposed to the 'commercial' values of wealth accumulation; and he has been criticised for idealising the physician in this way (for example see Frankenberg, 1974).

5. If this is the case then it would seem that the pattern-variables are in fact remarkably resilient. Waitzkin and Waterman (1974) argue that Parsons intended the pattern-variables as statements of broad normative principles rather than as an accurate account of the actual behaviour of doctors and patients. US physicians have demonstrated obvious economic self-interest and dubious collectivity orientation (1974:20). Possibly, regulating bodies such as the General Medical Council, which are apparently unwilling to withdraw the legitimation of registration except under conditions of flagrant breaches of etiquette (Stacey, 1988), enable a degree of discretion in submitting to the pattern-variables.

6. The Parsonian project is notable for having provided an alternative to subjectivism; as they were for Durkheim, society and social structures are 'real'. Social theory has more recently sought to develop a non-functionalist yet realist position, notably in the work of Bhaskar. Giddens has recognised common ground between his formulation and this realist programme (Giddens, 1982).

7. This diagram is based upon a simplification of that

appearing upon page 191 of 'The Constitution of Society' (Giddens, 1984), and upon this quotation from the same volume: 'The flow of action continually produces consequences which are unintended by actors, and these unintended consequences may also form unacknowledged conditions of action in a feedback fashion (ibid:27).

8. Arluke et al (1979) found respondents' responses to the four criteria of the sick role to be correlated with certain demographic variables. Increased family size correlated positively with the belief in a right of exemption from normal role. The right not to be blamed for the sickness correlated positively with increased age and with lower income. The duty to get well was highest among single people and younger people. The duty to seek help was higher among older people. The picture is of the elderly as more inclined to adopt a 'chronic' model of sickness, while the young and single see the sick role as least legitimating (sickness is blameworthy, duty to get well). The poor accept illness as part of their lot. From the perspective developed in this chapter, it might be concluded that the knowledgeability about sickness derives from the material circumstances of people's lives, which possess the modalities of structure underlying sickness-related agency to greater or lesser extent depending upon such factors as age, family size and income. As with many surveys, these conclusions are unfortunately post hoc. Also, as the authors note, all these correlations are low, although statistically significant at $P <= 0.05$. ($N = 440$).

9. This analysis of the sick and physician roles in terms of the S - D - L schema drew in part on Gerhardt (1988), although the interpretation is entirely my own.

Chapter 2

1. The Weberian interest in the effects that moral dimensions have upon a group in terms of closure may be seen in the

arguments of Kuhn (1962) and exemplified in Gilbert and Mulkay's (1984) description of the biochemical community and its influence on theory choice. Watson's (1968) tale of the development of the double-helical theory of DNA structure would also admit to such an analysis.

That the ideas and practices of science should be seen as reified ideology stemming from the capitalist mode of production defines the Marxian element in the work of authors such as Figlio, 1977, 1978, 1982; Wright, 1979; Zola, 1972. While resistant to an unreconstructed Marxism, the feminist analyses of the relationship between scientific knowledge claims and the sexual division of labour in Beer (1982), Lerner (1974), Scully (1980) also fall into this category.

The Durkheimian legacy is reflected in the notion that 'the classification of things reproduces the classification of (people)', argued by Bloor (1984:245). The problem of underdetermination of theory by data is resolved by recourse to systems of classification intelligible and therefore adoptable within a particular socio-cultural milieu, and which utilise in some way a contextual understanding of the relations of power and control between people. Bloor has suggested an explanation of Boyle's preference for an inert matter in such terms (1982:287), while Douglas's commentary on purity and pollution (1984) in terms of the classification of objects offers an alternative perspective on the need for 'elegance' and 'simplicity' in many scientific theories (see for example Milner (1969) on DNA). The chapter in this work on the development of surgical hygiene, also in Fox (1988), draws on this approach to analysing scientific knowledge. The reciprocity of illness and social categories is described in Gubrium (1987), in Sontag (1983) on cancer and TB; Schlanger (1971) and Pinell (1987) on cancer and other 'scourges'.

2. In proposing such a paradigm, Silverman has been influenced by the framework constructed by Foucault by which power, that is the impinging of structure upon agency, is not a unitary force, as conventional Marxism would hold, but a web

of techniques of subjugation or subjection by which social structure is constituted by individuals, who in turn are constructed by that structure (Silverman, 1985:88-90). Foucault has identified 'knowledge' as part of this web of power techniques (Foucault 1979:224), and this is an important distinguishing mark from the marxist position whereby a distinction is made between ideology and truth. For Foucault all 'knowledge', whether true or false, is a means by which power regulates its subjects. However Silverman accepts (1985:82) that this is only one way whereby the duality of structure and agency may be overcome, and it does not seem necessary to adopt the Foucaultian corpus in order to pursue methodological integration.

3. By a formal test of theory I take it Mitchell means some comparative methodology. It is however unclear precisely what measure of validity would be deemed appropriate to evaluate such a test which would be more rigorous than the use of cases in AI. Mitchell appears to accept this (Mitchell, 1983:202-3) in principle but argue that in practice an indeterminate set of events would need to be studied to be assured of 'complete knowledge'. This assurance on Mitchell's part of the attainability of such complete knowledge is not shared by this writer. This point is taken up in the final chapter of this study.

4. The shape of the thesis thus has something in common with the novel, specifically the detective story, whereby narrative clues are provided at intervals, the success of the genre depending on the reader's willingness to accept the logical process outlined by the author, by which the solution fits the clues.

Chapter 3

1. A consultant surgeon or other surgeon holding a Fellowship of the Royal College of Surgeons adopts by right the title 'Mr.', a historical legacy of a period when surgery was not

recognised as a legitimate medical discipline. This form of title is adopted in this work, and enables discrimination between surgeons and other clinicians, the latter carrying the titular form 'Dr.'.

2. Two other theatres do exist at Western. The first is in the neuro-surgical OT. The researcher was told by Mr C that it could not be commissioned because funds were lacking to equip and staff it. However, (as reported in Chapter 5) it was used during a neurosurgical emergency when a patient in recovery developed a sub-arachnoid bleed (Field Notes 24/2/7/5) and to some extent the researcher was being 'spun a line' by a party concerned to raise funding. The other is an area used for endoscopies, attached to the thoracic surgery OT. It has its own theatre, anaesthetic room, scrub area and recovery room, and is similar in layout to the other 'standard' OTs such as Theatres N. However, there is no sterile corridor, and sterile procedures are largely absent, no invasion taking place. The surgeon will wear a gown, but otherwise all clinic personnel will be in street clothes.

3. A notion of 'congruence' is perhaps more useful. What is meant is that topographically the spaces possess equivalent relationships to each other, even though the architectural details vary. In each, for example, one can move from the sterile corridor to anaesthetic room to theatre to sterile corridor without retracing one's steps.

4. Asepsis is used here as an unproblematic term, as it is used by informants and other personnel. But as will be seen, it is not straightforward to speak of aseptic technique simply as a set of practices which remove the patient from the vicinity of infection.

5. On one occasion in plastic OT, a day patient who was brought from the waiting area to the anaesthetic room in a wheelchair, and had undergone a minor operation under local anaesthetic was to be collected by a friend. She was left on her trolley, but not moved to the recovery room, but put near the entrance to the OT, in the sterile corridor. There was no

satisfactory place for this patient, she could not be taken back to the waiting area, nor would she be permitted to walk, of her own volition, within the confines of the OT. (Field Notes 19/2/7/5)

Chapter 4

1. Infection control Nurse B told the researcher that she considered overshoes a foolproof method of transmitting microbes from the relatively safe location of the floor, to the hands of the person taking off the shoes, especially as some personnel habitually carry their overshoes around in a back pocket for repeated use.
2. The use of structuralist analysis could enable an alternative reading of the history of surgical sterility to be derived entirely independently of the historical material. But its value here is as support for the historical material: it acts as a form of triangulation, and furthermore, it explains why it is more reasonable to accept this new reading, by demonstrating that rather than viewing asepsis as a descendant of antisepsis, such a structural approach suggests that these two approaches to surgical sterility are grounded in entirely different theories.
The resistance to antisepsis and the acceptance of asepsis need to be understood as social processes resulting from the underdetermination of these theories by nature. The theory choice rests not with an inherently 'better fit' between one theory and nature, but upon the different moral imperatives which could (and still can) be 'read off' the alternative theories. Such an analysis is compatible with the 'strong programme' in the sociology of science, with its commitments to relativism and non-realism, and particularly with Bloor's (1982) position that the classification of things depends on the classification of people in available social and political models of society (Bloor 1982:287).

The earlier part of this chapter therefore provides a reassurance that the history is reasonable, indeed likely; the structural analysis that follows demonstrates the relationship of events to social process, and adds predictive power to the analysis otherwise absent from such historiography.

3. At the time of writing, the antiseptic mouthwash 'Listerine' is using a TV advertisement featuring a dragon with poisonous breath to promote its product.

4. This wording is identical to that used in may accounts of the general attitudes to surgical dress of this time. Is this the source of a myth?

5. The growth of immunology is evidence of a resurgence of humoral concerns with susceptibility in modern medicine. The passages from Hamilton and Lamb quoted in this chapter offer explanations of decline in hospital mortality which draw on this same theory, with the benefit of hindsight.

Chapter 5

1. I am grateful to Dr Kieran Flannagan for this comment, which ensued from a discussion of the fieldwork reported in this chapter.

2. There is much overlap between the terms 'anaesthetic' and 'analgesic'. Historically surgery employed analgesics such as opium and alcohol, it was the discovery of general agents such as nitrous oxide and ether which induce unconsciousness which led to the coining of 'anaesthetic' - literally 'absence of sensation'. However, nitrous oxide is also an analgesic, and reduces pain before insensibility is achieved. Given that local 'anaesthetics' block pain but not other sensation including proprioception, they should really be termed analgesic. On the other hand using an agent which causes unconsciousness without analgesia, as may happen in light general anaesthesia is 'the patient's nightmare' of agony without ability to indicate pain.

3. The assessment of social circumstances appears in fact to

be very much an ad hoc process which varies from surgeon to surgeon. A memorandum circulated by one anaesthetic department (not at General) to surgeons noted a range of 'unsuitable' referrals for day surgery, but the only criteria of a 'social' nature were concerned with having accompaniment home after surgery and living within 20 miles of the hospital. Being male and having female kin appeared to be factors favouring early discharge with patients in the present study.

4. One possibility does not feature in this property space; that in which the anaesthetist refuses to permit surgery because the Fitness of the patient is so low. However, as is shown in the chapter, in such cases where there is no *alternative to surgery (Illness is very great)*, anaesthetists may be overruled on issues of Fitness. Case 4 in this chapter offers an intriguing twist to situations where Fitness is low.

Chapter 7

1. It is a tenet of the methodology adopted in this research that no a priori definition of that which is rational is assumed. There is instead a commitment to methodological relativism.

2. The mouth and lips are put to a wide range of uses. Eating, drinking, smoking and speaking are all generally pleasurable activities. In many cultures they also are used in erotic contacts.

3. This point seems to have been ignored by La Fontaine, and may place limits upon her argument that the knowledge of experience leads to greater status or rights. Imprisonment and other 'total institutionalisation' indeed have an effect of defining status well beyond the experience itself - the label of 'ex-con' or 'ex-mental patient' have been noted in the study of stigma by Goffman (1968) and others. A study of the imposition of stigmatising status passage may be particularly appropriate to medical sociology with regards to the effects

of hospitalisation.

4. To pursue the analogy, the rites of preparation might be considered to be the following of a course of study, and the intensive 'swotting' and separation from social contact immediately prior to examination. The rites of re-integration would include the graduation ceremony with particular ritual procession and obeisance to the head of the degree-awarding institution, the donning of unusual and distinguishing articles of clothing, photographs to mark the occasion, a celebratory meal and a document confirming successful passage. As with other initiatory rites, the transition phase is marked by reversals of social norms - initiands are closeted in a room, subjected to austere and absolute authority, and not permitted to speak or perform other normal functions for the duration. Any breaking of these rules is punished severely.

5. For example Richards, 1956; Gluckman, 1962; Turner, 1967, 1968, 1969; La Fontaine, 1972, 1977; Barth, 1975; Lewis, 1980.

6. For example Young and Wilmott, 1973; Harris, 1983; Wolfman, 1987.

7. The reception following a wedding possesses many characteristics of 'communitas' (Turner, 1969): the young and old mix freely, liberal libations of food and drink oil the social cogs, and rules governing kissing are inverted so that it is virtually obligatory. It is tempting to see in this carnival symbolic representation of the timelessness of the institution of marriage, and thereby of social structure in general. Similar festivities occur following funerals and christenings, and at other life-cycle markers such as retirement and coming-of-age.

8. There is a large corpus of work within medical sociology on these early stages of illness-related behaviour. See for example Apple, 1960; Stoeckle et al, 1963; Robinson, 1971, 1980; Zola, 1973; McKinlay, 1977; Hannay, 1979; Pill and Stott, 1982; Blaxter, 1983; Hibert, 1984; Meininger, 1986.

9. Parsons's (1951) account of the physician's role provides details of the doctor's entitlement to social sanctioning in

Western medicine. Functional specificity, affective neutrality and collectivity orientation, in Parsons' view, define the profession of medicine (Parsons 1951:454-465). The limits of this formulation are discussed in Chapters 1 and 9.

10. The formulation 'victim' to 'survivor' derives from discussions held with Dr Richard Thorn of ritual passage in a cancer clinic during May 1987.

11. The particular context of British surgery is capitalism, but it is worth noting that surgery is common to health care systems from the private insurance schemes in the USA to the UK's socialised system, to Soviet and Chinese state socialist societies, and to most parts of the Third World. For a non-Western example of 'psychic surgery' in Central America, which demonstrates rites of preparation, healing and post-healing acquiescence, see Stricherz, 1986. In all these societies, the continuity of social structure is virtually a first principle.

Chapter 8

1. This discourse, with its effect of normalising the patient, and thereby emphasising the status as healed, a status better than the pre-operative one, was side-tracked by the one patient observed to manage to ask questions and set the agenda during post-operative ward rounds. Mrs F had had an ectopic pregnancy, and had a fallopian tube removed as a consequence:

> Patient F: 'I have a list of questions which I wrote down, because I was a bit hazy when you explained before the operation. (Surgeon Mrs V nods) What exactly have you taken?'
>
> Mrs V: 'We have taken your right tube, that's all.
>
> Patient F: 'Not the ovary?'
>
> Mrs V: 'We never take the ovary, so you have two good ovaries.

Patient F: 'So will this make it difficult for me to conceive?' (1)
Mrs V: 'No you can produce an egg every month, same as before.'
Patient F: 'But I will only have a chance every other month?' (2)
Mrs V: 'No, just the same, you have both ovaries.'
Patient F: 'But one is not connected to anything...' (3)
Mrs V: 'No .... we can't just say which one will produce an egg each month.' (4) (Field Notes 15/2/5/8-9)

In this sequence, the questions at (1), (2), (3) force the surgeon to admit that the operation has not returned the patient to the status of 'normal' fertility, and is forced at (4) to fall back on the randomness of ovulation as a response, thereby at least avoiding being allocated the moral status as potential scapegoat for a future infertility. At this point, Mrs V hurriedly departed, preventing any further questions.

2. For example, a visit to IT to see Patient J, who had haemorrhaged during operation to excise a tumour, and had barely survived, consisted principally in discussion by Mr D with the duty anaesthetist of the patient's condition, and then a few words of encouragement to the patient. The latter appeared extremely frightened by his circumstances, and responded by gripping Mr D's hand. Mr D seemed to derive comfort from this. On leaving the ITU he asked the researcher 'Have you ever been in one of these places before? Just think what it's like for J.' This seems to be best described as an attempt at distancing from the role of surgeon, which the critical condition of Patient J brought into moral doubt.

3. The only time that the 'success' of an operation was mentioned in surgeon/patient interaction during the observation period was in a discussion with an articulate middle-class woman who had had a fallopian tube removed, and had written down a list of questions for Mrs V. The principal discussion was, as with Patient E, concerned with the future reproductive capacity of the patient, and the 'success' was

that this had been unimpaired.

4. It has been argued (for example Doyal, 1979; Klein, 1974) that the paradox is an uneasy historical consequence of political expediency, deriving from the initial unwillingness of British medical consultants to accept a state health service, and subsequently, a granting of additional autonomy.

5. Day patients occasionally created problems of classification as a consequence of not having been admitted to a ward. As noted in Chapter 3, Footnote 5, above, a patient admitted on a day basis to plastic theatre for a minor procedure under local anaesthesia, having been operated upon, was transferred to a trolley, which was then moved to a corner of the OT, close to the exit, to await a friend who was to collect her. Because she had not had general anaesthesia, she would be out of place in the recovery area; nor could she be put in the waiting area, as she might disturb patients arriving at the OT. Because she was young, she could not be put in a wheelchair. As a result she was most incongruously left at the limen of the OT, almost, but not quite departed. (Field Notes 19/2/7/5)

6. The procedure for discharging patients was one area in which there was doubt over the division of labour between clinicians and nursing staff. The procedure adopted at General normally entailed a call from the ward sister to the surgeon to report on recovery progress, and advise discharge. Where there was doubt, the surgeon would visit the ward to make a decision over a patient's discharge.

7. This anomaly, of operating department manager Nurse F having responsibility over a ward, is considered equivalent to the other anomaly - her responsibility for patients in the ITU. Neither of these spaces is perceived as a 'ward'.

Notes

Chapter 9

1. While the factory model is absurd, it also points up the absurdity of a consumerist model of healing. For the patient to be an active consumer, rather than a passive substance to be moulded and re-constituted, would imply a very different power relationship between healer and healed. In that sense, consumerism may actually be a radical programme for emancipating patients.
2. The use of these various decisions concerning the potential disposal of patients offers an explanation of a puzzling piece of data. The researcher was in plastic theatre, watching a minor piece of surgery, which although involving general anaesthesia would probably enable same-day discharge. A surgical registrar commented to the researcher 'Plastic surgery is very interesting and worthwhile - it is the only form of surgery that re-constructs as well as resects' (Field Notes 12/2/7/12). This additional invocation of an indicator of status change perhaps compensated for the routine of plastic theatre.
3. Support for the model, and evidence for its more general applicability is provided in Seaman and Evans (1961) who found that patients were discharged sooner on surgical wards where there was low stratification between nurses, junior and senior clinicians, than on surgical wards with high stratification. Surgeons consulted colleagues in other departments less than medical consultants, and cross-departmental consultation was lowest on high stratification surgical wards. Medical care differences are understandable, within the status change model, as consequent upon the relative significance of social significators (this being the greatest among hierarchical surgeons) and measures of physiological change (more márked in medicine, which does not possess the 'strong' social significators of surgery.) The issue of stratification effects in surgery is taken up in the final section of this study.

APPENDIX: FIELDWORK TECHNIQUES

The following notes provide further details of the techniques of fieldwork and data analysis used during this research.

Fieldwork Databases

The ethnography reported in this work is based upon observations of 68 operations. Operations were observed in all the operating theatre suites at General. Five of the 68 were on a gynaecology list at Saints Hospital (there being no gynaecology at General Hospital), only one was thoracic surgery, as the researcher was refused access to thoracic theatre (see pp. 94-5). The researcher joined six ward rounds with surgeons, one ITU round, and observed three day lists in the day case surgery unit and associated theatre. Interviews were conducted with 27 personnel (see p.45). Some of these were pre-arranged, and took place either in theatre rest rooms or in offices. Others were the outcome of unplanned encounters arising often from casual discussion of the researcher's presence. Minor conversations with the researcher were also recorded throughout fieldwork.

Recording observations and interviews

Interviews were recorded in shorthand notes, and expanded immediately afterwards. It was not always possible to record ad hoc interviews and observations in theatre on paper immediately; when this was the case the researcher would use the rest room or corridor to write up notes immediately after the event. These were included in the field record within 24 hours, permitting the addition of any data which had not been recalled while in the field.

The field record used the technique of 'log' and 'diary', the log providing details of observations, interviews etc, while the diary was used to record personal thoughts, ideas and

possibilities for investigation, insights and problems of theory. Both log and diary were dated, and data indexed by page number, enabling a record of the development of the theoretical framework as fieldwork progressed. This method articulated with the 'grounded theory/analytic induction' methodology which allowed theory to be derived from data, then tested against new data, and eventually formal case studies to be devised.
The index referencing system used enables a date and page number to be immediately identified. For example, 'Field Notes 12/3/7/6' references page 6 of field notes relating to dated observations (coded for reasons of confidentiality).

Data analysis

The developmental logic of both the methodology and the fieldwork reporting were devised to assist the process of analysis. The stages of analysis were as follows:
(a) Inspection of log entries (which were indexed but not cross-referenced) in conjunction with diary entries, provided possibilities for organising the data. The earliest stages of field observation were the least directed by theory, and so were most dependent upon diary insights. As analysis progressed, this fed back into fieldwork - guiding what observations were made, and what interviews were undertaken.
(b) An initial trial analysis of the field in terms of space, timing and routines (in the form of a draft ethnography) using log and diary entries was the first step in organising the data. The principal construct of the 'circuits of hygiene' was thus derived. Similar analyses of interactions led to further constructs: the Illness/Fitness dialectic, the Victim/Survivor status passage, and the PAC (paradox of autonomy/constraint).
(c) As a consequence of the grounding of theory in the data, re-drafting of the ethnographic sections enabled careful illustration of the theoretical constructs by data selection from the log. The method of data analysis was therefore inclusive - aberrant cases were not thrown out, but used to refine the theoretical construct. As far as possible, multiple

illustrations have been documented by index references.
(d) Data analysis progressed via the logic of case selection methodology: for further discussion see pp. 55-9; 324-7.

Fieldwork relations

(a) Researcher role

The need to find a role in environments where the researcher was by definition supernumerary was a constant source of anxiety. The ward round situation was most problematic, the researcher feeling obliged ethically to withdraw from physical examinations, thus not only limiting observation, but also threatening the research bargain by implying a consequential absence of scientific objectivity on the researcher's part. There was less difficulty with role within the OT, where visitors are a regular feature, and to be a fly on the wall was relatively straightforward, aided by the disguise of 'greens' and the ritual of separation from the outside world. When present with conscious patients, the researcher was concerned to 'appear re-assuring'! At a personal level, the effort of sustaining a role may have helped to distance some of the unpleasant aspects of the fieldwork. However, procedures in neurosurgery, and upon children, were extremely distressing for the researcher to observe and to write about.

(b) Research bargain

The researcher was concerned to effect a research bargain to ensure continuity of research, as key informants such as Drs J and F, surgeons C and P were also effectively gatekeepers to the field. Of these, only Dr J seemed at all interested in the research. Apart from supplying the mild flattery of having research done on one's work, and occasional minor assistance in theatre, no obvious research bargain was ever struck.

(c) Leaving the field

The researcher will feed back some of the research findings to selected informants, thus possibly supplying the missing research bargain. No formal departure from the field was ever announced, and the researcher may return.

Bibliography

Agnew, D.H. (1881) Principles and practice of surgery. Vol II. Philadelphia: Lippincott.

Andrew, J.M. (1970) Recovery from surgery with and without preparatory instructions. J Personality & Social Psychology. **15** 223-6

Apple, D. (1960) How laymen define illness. J Health & Human Behaviour **1** 219-228

Ardener, E. (1972) Belief and the problem of women. **in** La Fontaine, J.S. (ed) The interpretation of ritual. (q.v.).

Arluke, A. (1979) Re-examining the sick role concept. J Health & Social Behaviour **30** 30-36

Armstrong, D. (1979) Child development and medical ontology. Social Science & Medicine **13A** 9

Armstrong, D. (1982) The doctor-patient relationship 1930-1980. **in** Wright, P. and Treacher, A. (eds.) The problem of medical knowledge. Edinburgh University Press.

Armstrong, D. (1984) The patient's view. Social Science & Medicine **18** 743-5

Arney, W.R. and Neill, J. (1982) The location of pain in childbirth, natural childbirth and the transformation of obstetrics. Sociology of Health & Illness **4** 1-24

Atkinson, P. (1981) The clinical experience. London: Gower.

Atkinson, P. and Heath, C. (1981) (eds.) Medical work: realities and routines. London: Gower.

Auerbach, S.M., Kendall, P.C., Cuttler, H.F. and Levitt, N.R. (1976) Anxiety, locus of control, type of preparatory information and adjustment to dental surgery. J Consulting & Clinical Psychology **44** 809-18

Ayton, M. et al (1984) Report of an infection control nurses association working party on ward protective clothing. ICNA.

Barley, N. (1983) The innocent anthropologist. Harmondsworth: Penguin.

Barnes, R. (1874) Letter to the editor. Lancet **i** 179

Barofsky, I. (1978) Compliance, adherence and the therapeutic alliance. Social Science & Medicine **12A** 369-76

Barth, F. (1975) Ritual and knowledge among the Baktaman of New Guinea. New Haven: Yale UP.

Beck, C. (1895) Manual of surgical asepsis. New York: WB Saunders.

Bibliography

Becker, H.S., Geer, B., Hughes, E. and Strauss, A. (1961) Boys in white. Chicago University Press.

Beer, G. (1983) Darwin's plots: Evolutionary narrative in Darwin, George Eliot and Nineteenth century fiction. R & KP.

Bellaby, P. (1988) Sickness in the life course: reflections on the implications for social theory of beginning to study some of the effects of closed head injury. Paper presented to BSA Medical Sociology Conference, York.

Bidwell, L.A.(1912) Minor surgery. University of London.

Blacking, J. (1982) Audio-visual equipment for fieldwork in social anthropology. London: Social science research council.

Blaxter, M. (1983) The causes of disease: women talking. Social Science & Medicine **17** 59-69

Bland Sutton, J. (1927) The conquest of sepsis. Lancet **i** 781

Bloor, D. (1976) Knowledge and social imagery. London: R & KP.

Bloor, D. (1982) Durkheim and Mauss revisited: Classification and the sociology of knowledge. Studies in the History & Philosophy of Science **13** 267-97

Bloor, D. (1984) Reply to J.W. Smith. Studies in the History & Philosophy of Science **15** 245-9

Bloor, M. (1976) Professional autonomy and client exclusion. **in** Wadsworth and Robinson (eds.) Studies in everyday medical life.

Bloor, M. (1983) Notes on member validation. **in** Emerson, R.M. (ed.) Contemporary Field Research. Boston: Little Brown. 156-72

Bocock, R. (1974) Ritual in Industrial Society. London: George Allen and Unwin.

Bosk, C.L. (1979) Forgive and Remember. The management of medical failure. Chicago.

Bowman, A.K. (1942) Sir William MacEwen. William Hodge.

British Journal of Surgery (1914a) Sir Victor Horsley's clinic. British Journal of Surgery **1** 515-17

British Journal of Surgery (1914b) A visit to the clinic of Professor Garre at Bonn. British Journal of Surgery **1** 695-8

British Journal of Surgery (1915a) Sir John Bland-Sutton at the Middlesex Hospital. British Journal of Surgery **2** 110-3

British Journal of Surgery (1915b) Professor Von Eiselberg's clinic at Vienna. British Journal of Surgery **2** 328-33

British Journal of Surgery (1915c) The clinic of Sir Watson Cheyne. British Journal of Surgery **2** 325-7

British Medical Journal. (1883) Report. British Medical Journal **i** 815-16

Bibliography

Brown, G. and Harris, T. (1978) Social origins of depression. London: Tavistock.

Buchdahl, G. (1982) Editorial response to David Bloor. Studies in the History and Philosophy of Science **13** 299-304

Burkett, G. and Knafl, K. (1974) Judgement and decision-making in a surgical specialty. Sociology of Work & Occupations **1** 82

Bury, M. (1982) Chronic illness as biographical disruption. Sociology of Health & Illness **4** 167-182

Bury, M. (1986) Social constructionism and the development of medical sociology. Sociology of Health & Illness **8** 137-69

Bury, M. and Gabe, J. (1988) Tranquiliisers as a social problem. Sociological Review **36** 320-52

Byrne, P.S. and Long, P.E. (1976) Doctors talking to patients. London: HMSO.

Cain, M. and Finch, J (1981) Towards a rehabilitation of data **in** Abrams, P. et al. Practice and progress. London.

Cameron, H.C. (1907) Evolution of wound treatment. MacLehose.

Cartwright, A. (1967) Patients and their doctors. London: R & KP.

Casteneda, A. (1961) Historical development of the surgical mask. Surgery **49** 423-8

Churchill-Davidson (1984) A practice of anaesthesia. Lloyd-Luke.

Clarke, B. (n.d.) Personal communication.

Claus, L.M. (1982) The growth of a scientific discipline. Leuven.

Collins, H.M. (1981) What is TRASP? The radical programme as methodological imperative. Philosophy of the social sciences. **11** 215-24

Collins, B.J. and Bibby, B.A. (1981) Calculating Infection Risk. **in** Infection Control Nurses Association 12th annual Symposium.

Comaroff, J. (1976) A bitter pill to swallow. Sociological Review **24** 79-96

Coser, R.L. (1958) Authority and decision making in a hospital. American Sociological Review **23** 56-64

Creighton, C. (1894:1965) History of epidemics in Britain Vol.2. Cambridge.

Curtis, R.C. (1986) Are methodologies theories of scientific rationality? British Journal of the Philosophy of Science. **37** 135-62

Bibliography

Davies, C. (1983) Professionals in bureaucracies. **in** Dingwall, R. and Lewis, P. The sociology of the professions.

Davies, M. (1981) Woman's place is at the typewriter: the feminization of the labour force **in** Potter, D. et al. (eds)Society and the Social Sciences. London: R&KP.

Davis, A. and Horobin, G. (1977) Medical Encounters: the experience of illness and treatment. London: Croom Helm.

Denzin, N.R. (1978) The research act. New York: McGraw Hill.

Derrida, J. (1981) Positions. London: Athlone Press.

Dingwall, R. (1976) Aspects of illness. Oxford: Martin Robertson.

Doberneck, R.C. and Kleinman, R. (1984) The surgical garb. Surgery **95** 694-9

Dohrenwend, B.P. and Dohrenwend, B.S. (1969) Social status and psychological disorder. New York: Wiley

Dohrenwend, B.P. and Dohrenwend, B.S. (1973) Stressful life events. New York: Wiley.

Douglas, M. (1968) The social control of cognition. Man **3** 361-76

Douglas, M. (1970) Natural symbols. Harmondsworth: Penguin.

Douglas, M. (1978) Cultural bias. London: Royal Anthropological Institute of Great Britain and Ireland.

Douglas, M. (1984) Purity and danger. London: R & KP.

Doyal, L. (1979) The political economy of health. Pluto Press.

Eckstein, H. (1975) Case study and theory in political science. **in** Greenstein, F. and Polsby, N. (eds.) The handbook of political science: strategies of enquiry. Volume 7. 79-137. London: Addison-Wesley.

Egbert, L. (1964) Reduction of post-operative pain by encouragement and instruction. New England J Medicine **270** 825-7

Eisenberg, J.M., Kitz, D. and Webber, R.A. (1983) Developments of attitudes about sharing decision making. J Health & Social Behaviour **24** 85-90

Elston, M. A. (1977) Women in the medical profession: whose problem. **in** Stacey, M. et al. (eds.) Health and the division of labour. London: Croom Helm.

Emerson, J. (1970) Behaviour in private places: sustaining definitions of reality in gynecological examinations. **in** Dreitzel, H.P. (ed.) Recent Sociology 2. Macmillan.

Emerson, J. (1973) Nothing unusual is happening. **in** Shibutani, T. (ed.) Human nature and collective behaviour. Transaction.

Engels, F. (1968) The origin of the family, private property and the state. Progress.

Evers, H. (1981) Care or custody: experience of women patients in geriatric wards **in** Hutter, B. and Williams, G. Controlling Women: the normal and the deviant. London: Croom Helm.

Eyer, J. (1984) Capitalism, health and illness. **in** McKinlay, J. (ed.) Issues in the political economy of health care.

Fairhurst, E. (1977) On being a patient in an orthopaedic ward: some thoughts on the definiton of the situation. **in** Davis A and Horobin, G. Medical Encounters. London: Croom Helm.

Farley, J. and Geison, G. (1974) Science, politics and spontaneous generation in nineteenth century France: the Pasteur-Pouchet debate. Bulletin of the history of medicine **4** 161-198

Feyerabend, P. (1975) Against method. London: New Left Books.

Figlio, K. (1977) The historiography of scientific medicine: an invitation to the human sciences. Comparative Studies in Society and History **19** 262-286

Figlio, K. (1978) Chlorosis and chronic disease in 19th century Britain. International J Health Services **8** 589-617

Figlio, K. (1982) How does medicine mediate social relations? Workmen's compensation and medico-legal practices 1890-1940 **in** Wright, P. and Treacher, A. The Problem of medical knowledge. Edinburgh University Press.

Firth, R. (1972) Verbal and bodily rituals of greeting and parting. **in** La Fontaine, J.S. (ed) The interpretation of ritual (q.v.).

Fisher, R. (1977) Lord Lister. Macdonald and Jane's.

Fletcher, V.S. (1977) A history of the operation gown and mask. NATNews **14** 19-24

Flood, A.B. and Scott, W.R. (1978) Professional power and professional effectiveness. J Health & Social Behaviour **19** 240-54

Fortes, D. (1962) Death and succession. **in** Gluckman, M. (ed) Essays on the ritual of social relations.

Forsyth, G. (1966) Doctors and state medicine. London: Pitman.

Foucault, M. (1976) Birth of the clinic. Tavistock.

Foucault, M. (1979) Discipline and punish. Peregrine.

Fox, N.J. (1988) Scientific theory choice and social structure: the case of Lister's antisepsis, humoral theory and asepsis. History of Science **26** 367-397

Frankenberg, R. (1966) Communities in Britain. Harmondsworth: Penguin.

Frankenberg, R.(1974) Functionalism and after. International J Health Services **4** 411-27

Freidson, E. (1970) Profession of medicine. New York: Dodd Mead.

Freidson, E. (1983) Theory of professions: the state of the art. **in** Dingwall, R. and Lewis, P. The sociology of the professions.

Gabbay, J and Francis, L. (1988) How much day surgery? Delphic predictions. British Medical J **297** 1249-51

Galaty, J. (1983) Ceremony and society: the poetics of Maasai ritual. Man **18** 361-380

Gallagher, E. (1976) Lines of reconstruction and extension in the Parsonian sociology of illness. Social Science & Medicine **10** 208-18

Gallagher, E. (1977) Home dialysis and socio-medical policy. **in** Stacey, M et al. (eds.) Health and the division of labour. Croom Helm. (q.v.)

Gerhardt, U. (1979) The Parsonian paradigm and the identity of medical sociology. Sociological Review **27** 229-51

Gerhardt, U. (1987) Parsons, role theory and health interaction. **in** Scambler, G. (ed.) Sociological theory and medical sociology. Tavistock.

Gerster, A.G. (1888) Aseptic and antiseptic surgery. London: Bailliere, Tindall and Cox.

Giddens, A. (1977) Studies in social and political theory. London: Hutchinson.

Giddens, A. (1978) Power in the recent writings of Talcott Parsons. **in** Worsley, P. (ed.). Modern sociology. 2nd Edition. Harmonsworth: Penguin.

Giddens, A. (1982) Profiles and critiques in social theory. London: Macmillan.

Giddens, A. (1984) The constitution of society. Cambridge: Polity.

Gilbert, G.N. and Mulkay, M. (1983) In search of the action. **in** Gilbert, G.N. and Abell, P. (eds) Accounts and Action. Gower.

Gilbert, G.N. and Mulkay, M. (1984) Opening Pandora's Box. Cambridge University Press.

Gill, D. (1976) The reorganisation of the NHS, with special consideration to the role of the community physician. **in** Stacey, M. (ed.) The sociology of the NHS. Sociological Review Monograph. University of Keele.

Glaser, B. and Strauss, A. (1967) The discovery of grounded theory. London: Weidenfeld and Nicholson.

Glaser, B. and Strauss, A. (1970) Awareness of dying. London: Weidenfeld and Nicholson.

Gluckman, M. (1962) Essays on the ritual of social relations. Manchester University Press.

Gluckman, M. (1962) Les rites de passage **in** Gluckman, M. (ed) Essays on the ritual of social relations (q.v.).

Godlee, R.J. (1924) Lord Lister. Oxford: Clarendon.

Goffman, E. (1961) Encounters. Indianapolis: Bobbs Merrill.

Goffman, E. (1963) Stigma. New York: Prentice Hall.

Goffman, E. (1968) Asylums. Harmondsworth: Penguin.

Goffman, E. (1969) The presentation of self in everyday life. Harmondsworth: Penguin.

Goffman, E. (1974) Frame Analysis. Cambridge: Harvard UP.

Goldstein, J. (1984) Foucault among the sociologists. History and Theory **15** 170-92

Gouldner, A.W. (1971) The coming crisis of Western sociology. Heinemann.

Graham, H. (1979) Prevention and health: every mother's business. **in** Harris, C. The Sociology of the Family. (Sociological Review Monograph) University of Keele.

Graham, H. (1984) Women, health and the family. Wheatsheaf.

Gubrium, J.P. (1987) Structuring and de-structuring the course of illness. Sociology of Health & Illness. **9** 1

Hamilton, D. (1982) The Nineteenth century surgical revolution - antisepsis or better nutrition? Bulletin of the History of Medicine **56** 30-40

Hamilton, D. and Lamb, M. (1982) Surgeons and surgery. **in** Checkland, O. and Lamb, M. Health care as social history. Aberdeen University Press.

Hammersley, M. and Atkinson, P. (1983) Ethnography: principles in practice. London: Tavistock.

Hannay, D.R. (1979) The symptom iceberg. R&KP.

Hannay, D.R. (1988) Lecture notes in medical sociology. Oxford: Blackwell.

Harris, C.C. (1983) The family and industrial society. Allen and Unwin.

Hart, N.(1985) The sociology of health and illness. Ormskirk: Causeway.

Hartsfield, J. and Clopton, J. (1985) Reducing pre-surgical anxiety. Social Science & Medicine **20** 529

Haug, M. (1973) Deprofessionalisation: an alternative hypothesis for the future. **in** Halmos, P. (ed.)

Professionalisation and social change. (Sociological Review Monograph 20) University of Keele.

Helman, C. (1984) Culture, health and illness. Bristol: Wright.

Herzlich, C.(1973) Health and illness. London: Academic Press.

Hewer, C.L. (1953) Recent advances in anaesthesia and analgesia. 7th Edition. Churchill.

Higgins, P. (1980) Outsiders in a hearing world: a sociology of deafness. Beverley Hills: Sage.

Hilbert, R.A. (1984) The acultural dimension of chronic pain: flawed reality construction and the problem of meaning. Social Problems **31** 365-70

Hilbourne, J. (1973) On disabling the normal. British J Social Work **2** 497-507

Hillier, S.M. amd Scrivens, E. (1986) Ethnicity, health and health care. in Patrick, D. and Scambler, G. (eds.) Sociology as applied to medicine. Bailliere Tindall.

Hindley, D.G. (1925) Aseptic surgery in the fourteenth century. Nineteenth Century and After **98** 581-90

Holy, L. and Stuchlik, M. (1983) Actions, norms and representations.

Horton, R. (1970) African thought and Western science. **in** Wilson, B. Rationality. Blackwell.

Hudson, A. (1869) Lectures on the study of fever. Philadelphia.

Hughes Bennett, J. (1868) The atmospheric germ theory. Edinburgh Medical J **13** 810-34

Illich, I. (1975) Medical Nemesis. Calder and Bovars.

Inglehart, J. (1982) Health care and American business. New England J Medicine **306** 120-4

Jeffery, R. (1979) Normal rubbish: deviant patients in casualty departments. Sociology of Health & Illness **1** 90-108

Johnson, J.E., Leventhal, H. and Dabbs, J.M. (1971) Contribution of emotional and instrumental processes in adaptation to surgery. J Personality Social Psychology **20** 55-64

Johnson, J.E. and Leventhal, H. (1974) Effects of accurate expectations and behavioural instructions on reactions during a noxious medical exmaination. J Personality & Social Psychology **29** 710-18

Johnson, T. (1977) Professions in the class struggle. **in** Scase, R. Industrial society: class cleavage and control. Allen and Unwin.

Johnston, M. (1980) Anxiety and surgical patients. Psychological Medicine **10** 145-52

Katz, P. (1984) Ritual in the operating room. Ethnology **20** 335-50

Keller, E.F. (1985) Reflections on gender and science. Yale UP.

Kendall, P.C. (1979) Cognitive-behavioural and patient education: intervention in cardiac catheterization procedures. J Consulting & Clinical Psychology **47** 49-58

Klein, R. (1974) Policy making in the National Health Service. Policy and politics. **22** 1-13

Knafl, K. and Burkett, G. (1975) Professional socialization in a surgical specialty: acquiring medical judgement. Social Science & Medicine **9** 397-404

Knowles, J. (1977) Doing better and feeling worse. New York: Norton.

Kuhn, T.S. (1962) Structure of scientific revolutions. University of Chicago Press.

La Fontaine, J.S. (1972) Ritualization of women's life crises in Bugisu. **in** La Fontaine J.S. (ed) The interpretation of ritual (q.v.).

La Fontaine, J.S. (1972) The interpretation of ritual. London: Tavistock.

La Fontaine, J.S. (1977) The power of rights. Man **12** 421-437

Lakatos, I. (1970) Falsification and the methodology of scientific research **in** Lakatos and Musgrave. Criticism and the growth of knowledge (q.v.).

Lakatos, I. (1978) The methodology of scientific research programmes. Cambridge University Press.

Lakatos, I. and Musgrave, A.E. (1970) Criticism and the growth of knowledge. Cambridge University Press.

Lancet (1879) Editorial. Lancet **ii** 246-7

Lancet Sanitary Commission (1874) Surgical wards of St Barts Hospital Report. Lancet **i** 246-7

Larson, M. (1979) Professionalism, rise and fall. International J Health Services **9** 607-27

Lave, J. (1986) The values of quantification. **in** Law, J. Power, action and belief. London: R & KP.

Leeson, J. and Gray, J. (1978) Women and medicine. London: Tavistock.

Leeson, J.R. (1927) Lister as I knew him. London: Bailliere, Tindall and Cox.

Leff, J. (1982) A controlled trial of social intervention in the families of schizophrenic patients. British J Psychology **141** 121-34

Bibliography

Lemert, C.C. and Gillan G. (1982) Michel Foucault. Columbia.

Lerner, H. (1974) The hysterical personality: a women's disease. Comprehensive Psychiatry **15** 157-64

Lewis, G. (1975) Knowledge of illness in a Sepik society. London: The Athlone Press.

Lewis, G. (1980) The day of shining red. Cambridge U.P.

Lindesmith, A.R. (1952) Comment on W.S. Robinson. American Sociological Review **17** 492-3

Lister, J. (1867a) On a new method of treating compound fractures, abscesses etc. Lancet **i** 326-9, 357-9, 387-9, 507-9; **ii** 95-6

Lister, J. (1867b) On the antiseptic principle in the practice of surgery. Lancet **2** 353-6

Lister, J. (1870) Effects of the antiseptic treatment upon the salubrity of a surgical hospital. Lancet **i** 4-6, 40-42

Lister, J. (1871) On a case illustrating the present aspects of the antiseptic system of treatment in surgery. British Medical Journal **1** 30-32

Lister, J. (1875) Address on the effect of the antiseptic treatment upon the general salubrity of surgical hospitals. British Medical Journal **2** 769-71

Lister, J. (1883) An address on the treatment of fracture of the patella. British Medical Journal **2** 855-60

Lister, J. (1890) Address on the present position of antiseptic surgery. British Medical Journal **2** 377-79

Lister, J. (1908) On some points in the history of antiseptic surgery. Lancet **i** 1815-16

Lockwood, C.B. (1896) Aseptic surgery. Edinburgh: Pentland.

MacCormack, W. (1880) Antiseptic Surgery. London: Smith, Elder & Co.

Macintyre, S.J. (1978) The management of childbirth. Social Science & Medicine **11**

McGlew, T. and Robertson, N. (1981) Social change and the shifting boundaries of change in medicine. **in** Adler, A. and Asquith, S. Discretion in welfare.

McKinlay, J.B. (1977) Social networks, lay consultation and help-seeking behaviou. Social Forces **51** 275-92

McKeown, T. (1979) The role of medicine. Blackwell.

McNeil, B.J. (1978) Fallacy of five-year survival in lung cancer. New England J Medicine **299** 1397

Macherey, P. and Balibar, E. (1978) Literature as an ideological form. Oxford Literary Review **3** 4-12

Malin, N. (1987) (ed.) Reassessing community care.

Manier, E. (1980) History, philosophy and the sociology of biology. Studies in the History & Philosophy of Science **11** 1-24

Matthews, A. and Ridgeway, V. (1981) Personality and surgical recovery: a review. Brit J Clinical Psychology **20** 243-60

Mechanic, D. (1978) Stress, crisis and disease. **in** Medical Sociology (2nd Ed.) New York: Free Press.

Medical Research Council (1968) Report: aseptic methods in the operating suite. Lancet **i** 705-9, 763-8, 831-9

Meininger, J. (1986) Sex differences in factors associated with use of medical care. Social Science & Medicine **22** 285-92

Miller, J.M. (1945) The Surgeon's glove. Annals of Surgery **122** 902

Millman, M. (1977) The unkindest cut: life in the backrooms of medicine. New York: William Morrow.

Milner, G. (1969) Siamese twins, birds and the double helix. Man **4** 5-23

Mitchell, J.C. (1983) Case and situation analysis. Sociological Review **31** 187-211.

Mitchell, J.M. (1945) The surgeon's glove. Annals of Surgery **122** 902

Mitchell, N.J. (1981) Theatre clothing as a means of reducing numbers of airborne organisms. **in** Infection Control Nurses Association 12th annual symposium.

Moerman, D. (1979) The anthropology of symbolic healing. Current Anthropology **20** 59-66

Moore, W.E. (1970) The professional: rules and roles. New York.

Morgan, M., Calnan, M. and Manning, N. (1985) Sociological approaches to health and medicine. London: Croom Helm.

Murcott, A. (1981) On the typification of 'bad' patients. **in** Atkinson and Heath. Medical Work (q.v.).

Murray Parkes, C., Benjamin, B. and Fitzgerald, R.G. (1969) Broken heart: a statistical survey of increased mortality among widowers. British Medical J. **1** 740-743

Mushin, W.W. (1948) Anaesthesia for the poor risk. Blackwell.

Nagel, E. (1963) Problems of concept and theory formation in the social sciences. **in** Natanson, M. (ed.) Philosophy of the Social Sciences. Random House.

Nathanson, C. (1975) Illness and the feminine role: a theoretical review. Social Science & Medicine **9** 57-62

Navarro, V. (1976) Medicine under capitalism. New York: Prodist.

Navarro, V. (1978) Class struggle, the state and medicine. London: Martin Robertson.

Navarro, V. (1982) (ed.) Imperialism, health and medicine. Pluto.

Navarro, V. (1986) Crisis, health and medicine. London: Tavistock.

Ngubane, H. (1977) Body and mind in Zulu medicine. Academic Press.

Nicholson, M. and McLaughlin, C. (1987) Social constructionism and medical sociology: a reply to M.R. Bury. Sociology of
Nunneley, T. (1869) Adress in surgery. Lancet **ii** 143-56

Health & Illness **9** 107-26

Nutton, V. (1983) The seeds of disease. Medical History **27** 1-35

O'Neill, J. (1986a) The medicalization of social control. Canadian Review of Sociology **23** 350-64

O'Neill, J. (1986b) A realist model of knowledge. Philosophy of the Social Sciences **16** 1-19

Oakley, A. (1980) Women Confined. Oxford: Martin Robertson.

Orr, N. (1981) Is a mask necessary in the operating theatre? Annals of the Royal College of Surgeons **43** 390-1

Oxford English Dictionary (1966) Oxford: Clarendon.

Paget, J. (1862) Address in surgery. **in** Year book for medicine, surgery and their allied sciences. London.

Parsons, T. (1951) The social system. Free Press.

Parsons, T. and Fox, R. (1952) Illness, therapy and the modern American family. J Social Issues **8** 31-44

Parry, N. and Parry, J. (1976) The rise of the medical profession. London.

Parsons, T. (1975) The sick role and the role of the physician reconsidered. Millbank Memorial Fund Quarterly **53** 257

Pill, R. and Stott, N. (1982) Concepts of illness, causation and responsibility. Social Science & Medicine **16** 43-52

Pinell, P. (1987) How do cancer patients express their point of view? Sociology of Health & Illness **9** 25-44

Popay, J. (1980) Medical charities, prevention and the media. British Medical Journal **1** 110

Popham, G. (1981) Government and smoking: policy making and pressure groups. Policy and politics. **9** 331

Popper, K. (1959) The logic of scientific discovery. London: Hutchinson.

Popper, K. (1970) Normal science and its dangers. **in** Lakatos and Musgrave (eds.) Criticism and the growth of knowledge. Cambridge University Press.

Portwood, D. and Fielding, A. (1981) Privilege and the professions. Sociological Review **29** 749-73

Prior, L. (1987) Policing the dead: a sociology of the mortuary. Sociology **21** 355-76

Prior, L. (1988) The architecture of the hospital. British Journal of Sociology **39** 86-113

Rawlings, B. (1985) It's all their fault: communication problems and their consequences in a hospital. Paper presented at BSA Medical Sociology Conference. York.

Ray, C. and Fitzgibbon, G. (1981) Stress arousal and coping with surgery. Psychological Medicine **11** 741-6

Reading, A.E. (1979) The short term effect of psychological preparation for surgery. Social Science & Medicine **13** 641-54

Reynolds, M. (1978) No news is bad news: patients' views about communication in hospital. British Medical J **1** 1673-6

Richards, A. (1956) Chisungu. London: Faber and Faber.

Ridgeway, V. and Matthews, A. (1982) Psychological preparation for surgery. British J Clinical Psychology **21** 271-80

Riehl, J.P. and Roy, C (eds) (1980) Conceptual models for nursing practice. New York: Appleton Century Crofts.

Ritter, M.A. et al. (1975) The operating room environment as affected by people and the surgical face mask. Clinical Orthopaedics **111** 147-50

Roberts, H. (1981) Women, health and reproduction. R & KP.

Robinson, D. (1971) The process of becoming ill. R & KP.

Robinson, D. (1973) Patients, practioners and medical care. Heinemann.

Robinson, D. (1980) The self-help component of primary care. Social Science & Medicine **14A** 415-421

Robinson, W.S. (1951) The logical structure of analytic induction. American Sociological Review **16** 812-18.

Rose, G. (1981) Strategy of prevention. British Medical Journal **283** 1421

Rosenberg, C.E. (1979) Healing and history. New York

Rosengren, W.R. and DeVault, S. (1963) The sociology of time and space in an obstetrical hospital. **in** Freidson, E. The hospital in modern society. Free Press.

Bibliography

Royal College of Surgeons of England. (1985) Guidelines for day case surgery. London: RCSE.

Rundall, T.G. (1978) Life change and recovery from surgery. J Health & Social Behaviour **19** 418-27

Ryan, D.W. (1975) A questionnaire survey of pre-operative fears. British J Clinical Practice **29** 3-6

Scambler, G. (1987) Sociological theory and medical sociology. London: Tavistock.

Scanzoni, J.H. (1970) Opportunity and the family. New York: Free Press.

Schimmelbusch, C. (1895) Aseptic treatment of wounds. London: Lewis.

Schlanger, J.E. (1971) Illness as a socio-political category.**in** Les metaphors d'organisme. Paris: J Voin.

Schmale, A.H. and Iker, H. (1971) Hopelessness as a predictor of cervical cancer. Social Science & Medicine **5** 95-100

Scully, D. (1980) Men who control women's health. Boston: Houghton-Mifflin.

Seaman, M. and Evans, J.W. (1961) Stratification and hospital care: objective criteria of performance. American Sociological Review **26** 193-203

Selwyn, S. (1965) Sir James Simpson and hospital cross infection. Medical History **9** 241-8

Shutz, A. (1962) Concept and theory formation in the social sciences. Collected Papers Volume I. Martinus Nijhoff.

Silverman, D. (1981) The child as a social object: Down's syndrome children in a paediatric cardiology clinic. Sociology of Health & Illness **3** 254-74

Silverman, D. (1985) Qualitative methodology and sociology. Aldershot: Gower.

Sime, A.M. (1976) Relations of pre-operative fear, type of coping and information received about surgery, to recovery from surgery. J Personality & Social Psychology **34** 716-24

Simpson, J. (1871) Collected works. Two Vols. Edinburgh: Adam and Charles Blacksmith.

Smith, F.B. (1979) The people's health 1830-1910. Croom Helm.

Sontag, S. (1983) Illness as metaphor. Penguin.

Stacey, M. (1976) (ed.) The sociology of the NHS. (Sociological Review Monograph) University of Keele.

Stacey, M., Reid, M., Heath, C. and Dingwall, R. (1977) (eds.) Health and the division of labour. London: Croom Helm.

Stacey, M. (1988) Personal communication.

Stevens, B.J. (1979) Nursing Theory. Boston: Little Brown & Co.

Stevenson, L.G. (1955) Science down the drain. Bulletin of the history of medicine **29** 1-26

Stern, B.J. (1941) Social factors and medical progress. Columbia University Press.

Stimpson, G. (1976) General practioners, Trouble and types of patients. **in** Stacey, M. (ed.) The sociology of the NHS (q.v.).

Stimpson, G. and Webb, B. (1975) Going to see the doctor. R & KP.

Stoeckle, M.D. (1963) On going to see the doctor: the contribution of the patient to the decision to seek medical aid. J Chronic Disability **16** 975-89

Stricherz, M.E. (1986) Psychic surgery: a ritual in social expectation and hypnotic-like phenomena. Paper presented to Mid-South Sociological Association, Texas Technical Univ.

Strong, P. (1978) The ceremonial order of the clinic. London: Routledge.

Strong, P. (1979) Sociological imperialism and the profession of medicine. Social Science & Medicine **13A** 199-215

Szasz, T and Hollender, M. (1956) A contribution to the philosophy of medicine: the basic models of the doctor-patient relationship. Archives of Internal Medicine **97** 585-92

Tambiah, S. (1969) Animals are good to think and good to prohibit. Ethnology **8** 423-59

Thompson, J. (1827) (ed.) The works of William Cullen. Edinburgh.

Thompson, St.C. (1927) Memories of a house surgeon. Lancet **i** 775-80

Toledo-Pereyra, L.H. and Toledo, M.M. (1979) Anti-contagionism in the opposition to Lister. Current Surgery. **36** 78-87

Travis, C.R. (1985) Medical decision making and elective surgery: the case of hysterectomy. Risk Analysis **5** 241-51

Trostle, J.A. (1988) Medical compliance as an ideology. Social Science & Medicine **27** 1299-1308

Tudor Hart, J. (1971) The Inverse Care Law. Lancet **i** 405-12

Turner, B. (1984) The body and society. Oxford: Blackwell.

Turner, B. (1987) Medical power and social knowledge. London: Sage.

Turner, V. (1967) The forest of symbols. Cornell UP.

Turner, V. (1968) The drums of affliction. Oxford.

Turner, V. (1969) The ritual process. London: R&KP.

Twaddle, A.C. (1974) The concept of health status. Social Science & Medicine **8** 29-38

Vallack, A.S. (1905) Principles and practice of asepsis. London: Bailliere, Tindall and Cox.

Van Gennep, A. (1909, 1960) Les rites de passage. London: R&KP.

Wadsworth, M. and Robinson, D. (1976) Studies in everyday medical life. Martin Robertson.

Waitzkin, H. (1983) The second sickness. Free Press.

Waitzkin, H. and Waterman, B. (1974) The exploitation of illness in capitalist society. Indianapolis: Bobbs Merrill.

Waitzkin, H. and Waterman, B. (1976) Social Theory and medicine. International J Health Services. **6** 9-23

Wakeford, R.E. and Allery, L. (1986) Doctors attitudes, medical philosophy and political views. British Medical J **292** 1025-7

Wakeford, R.E., Allery, L., Brook, P. and Ingleby, D. (1986) Characteristics of medical students wanting to be GPs. J Royal College of General Practitioners **36** 228-9

Walker, A. (1981) Community care and the elderly in Great Britain today. International J Health Services 11 541

Wallace, L.M. (1986) Informed consent to elective surgery: the therapeutic value. Social Science & Medicine **22** 29-33

Wallis, R. and Bruce S. (1983) Accounting for action: defending the common-sense heresy. Sociology **17** 97-110

Watson, J.D. (1968) The double helix. London: Weidenfeld and Nicholson.

Webb, C. (1981) Classification and framing: a sociological analysis of task centred nursing and the nursing process. J Advanced Nursing **6** 369-76

Weis, O.F. (1983) Anxiety reduction following post-operative analgesics. Lancet **i** 43

West, P. (1976) The physician and the management of childhood epilepsy. **in** Wadsworth and Robinson. Studies in everyday medical life (q.v.).

Wharton R. and Lewith G. (1986) Complementary medicine and the General Practitioner. British Medical J **292** 1498-1500

Wilensky, A. (1964) The professionalisation of everyone? American Journal of Sociology. **70** 137-58

Wilson, M. (1972) The wedding cakes: a study of ritual change. **in** La Fontaine, J.S. (ed) The interpretation of ritual (q.v.).

Wohl, A.S. (1983) Endangered lives. London: J.M. Dent.

Wolfman, S. (1987) In-laws and outlaws. Croom Helm.

Wooley, P.R. (1978) The effect of doctor-patient communication on satisfaction and outcome of care. Social Science & Medicine **12** 123-7

World Health Organisation (1985) Targets for health for all. WHO.

Wright, P. (1979) A study in the legitimation of knowledge: the 'success' of medicine and the failure of astrology. **in** Wallis, R. (ed.) On the margins of science. University of Keele.

Wright, P. and Treacher, A. (1982) The problem of medical knowledge. Edinburgh University Press.

Wynne, B.(1982) Natural knowledge and social context. **in** Barnes, B. and Edge, D. Science in context. Open University Press.

Young, G. (1981) A woman in medicine: reflections from the inside. **in** Roberts, H. (ed) Women, health and reproduction. R & KP.

Young, M. and Wilmott, P. (1973) The symmetrical family. Penguin.

Youngson, A.J. (1979) The scientific revolution in Victorian medicine. London: Croom Helm.

Zborowski, M. (1972) Cultural components in response to pain. **in** Worsley, P. (ed) Problems of modern society. Harmondsworth: Penguin.

Zola, I.K. (1966) Culture and symptoms: an analysis of patients presenting complaints. American Sociological Review **31** 615-30

Zola, I.K. (1972) Medicine as an institution of social control. Sociological Review **20** 487-504

Zola, I.K. (1973) Pathway to the doctor. Social Science & Medicine **7** 677-89

Zola, I.K. (1981) Structural constraints in the doctor-patient relationship: the case of non-compliance. **in** Eisenberg, L. and Kleinman, A. (eds.) The relevance of social science for medicine. Dorndorff: Reidel.